



# **COM5940 NEW MEDIA BUSINESS MODEL & INNOVATION:**

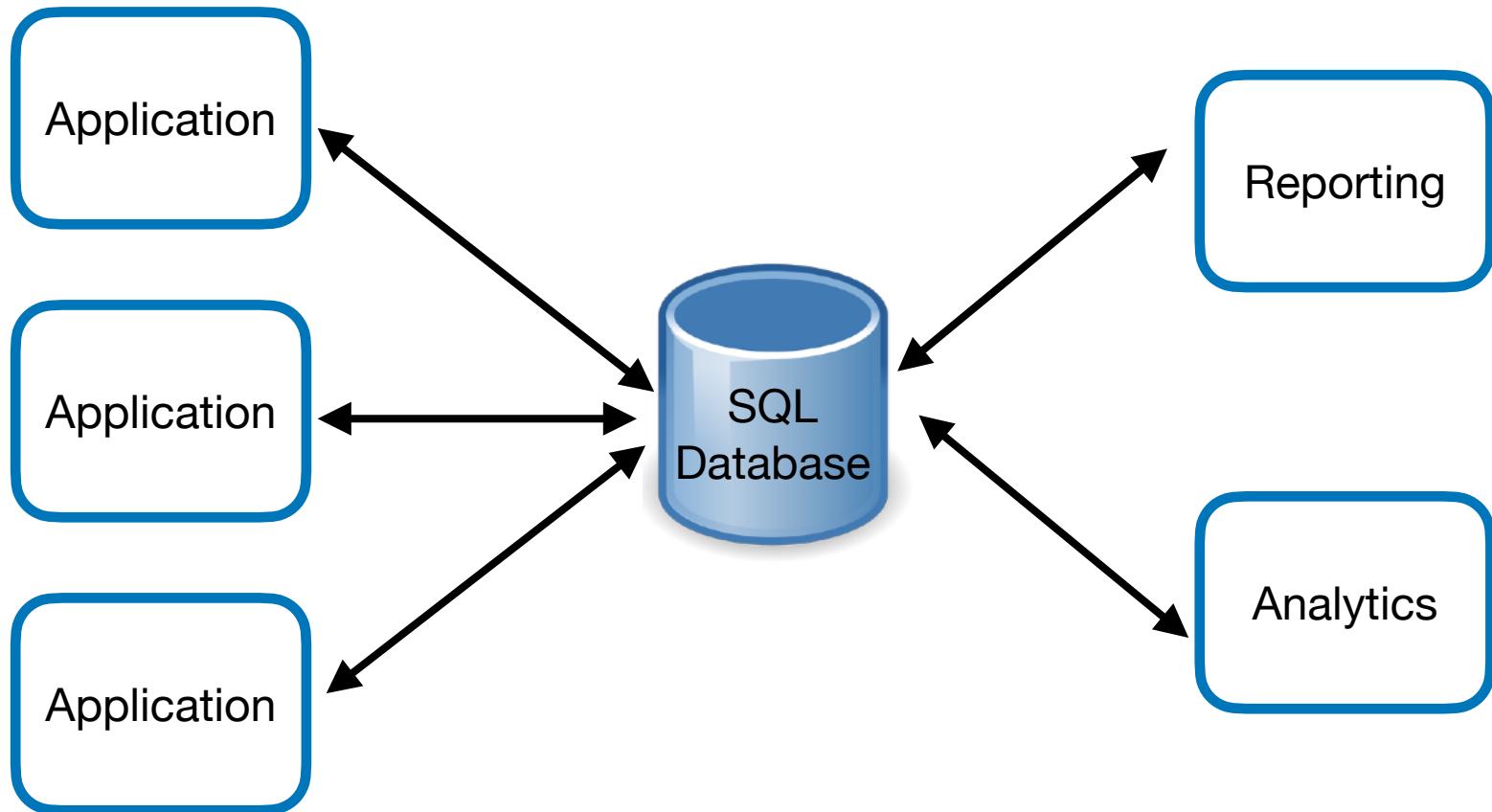
## **LESSON 10-INTRODUCTION TO WEB 3.0 & BLOCKCHAIN**

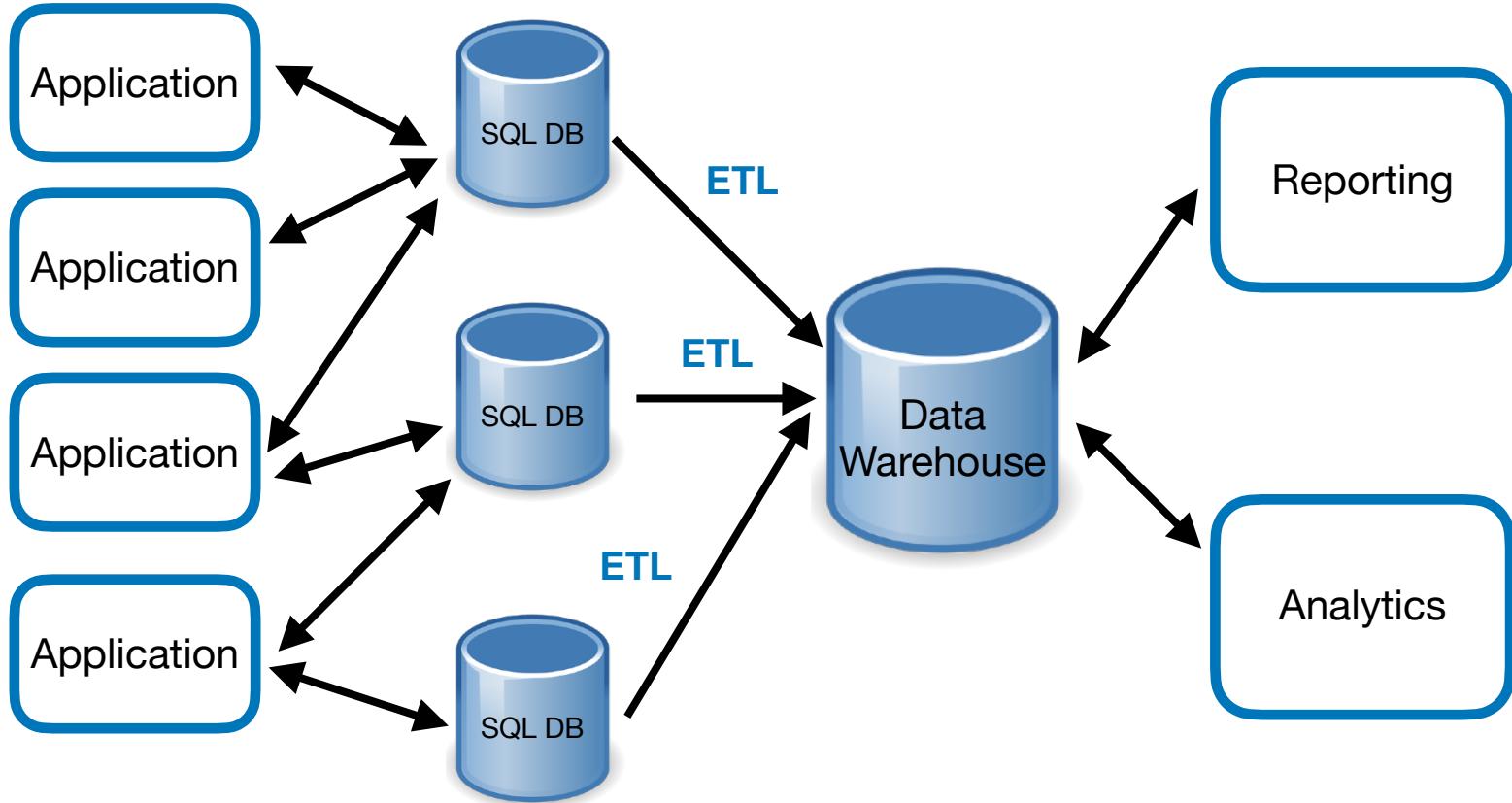
Bernard Suen  
Center for Entrepreneurship  
Chinese University of Hong Kong

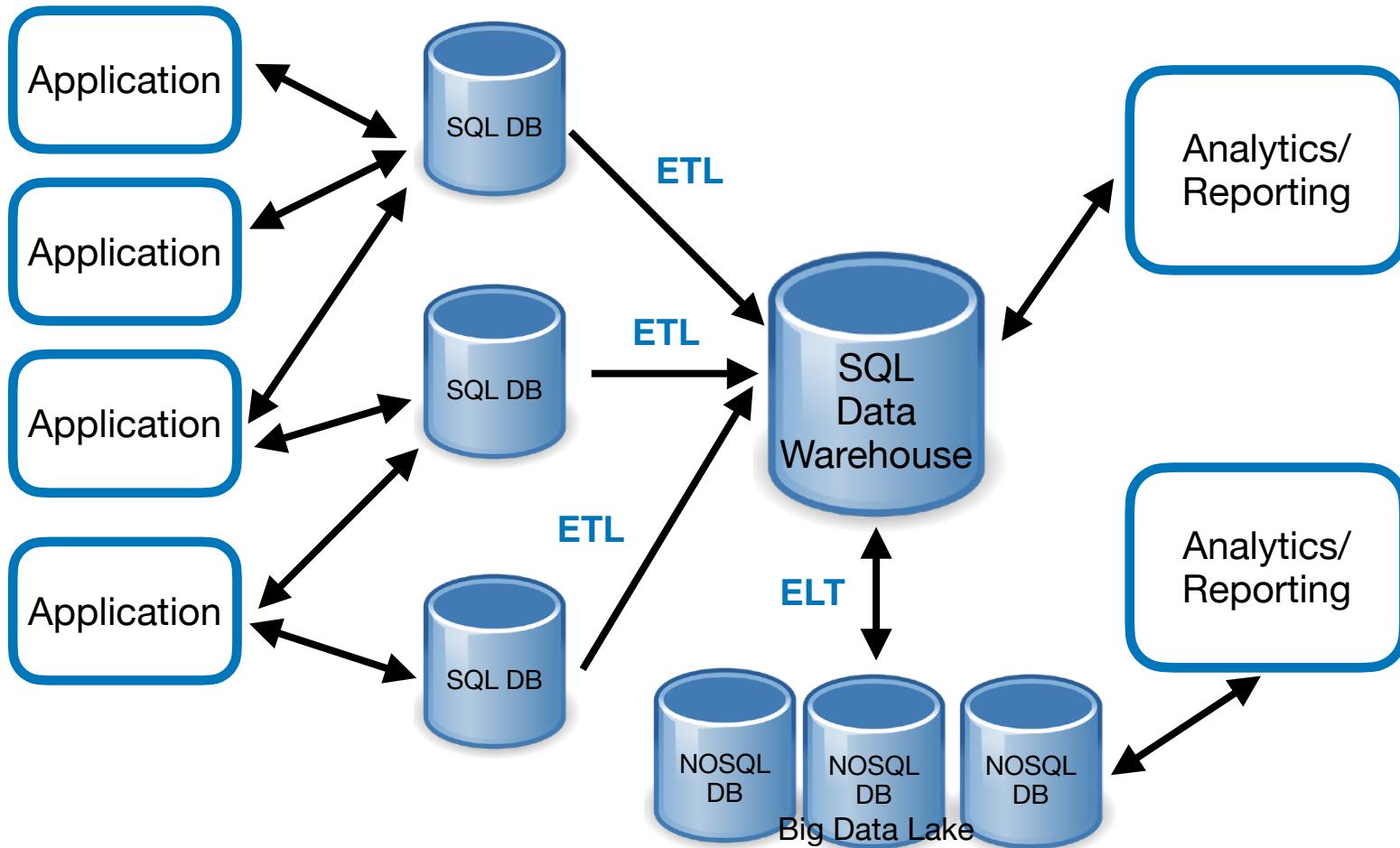
**Today's agenda.**

1. **Serverless Data Warehouse and Machine Learning**
2. **From Web 2.0 to Web 3.0**
3. **Application of Blockchain Beyond Crypto-Currency**
4. **Experiential Tech for the Embodied Internet**
5. **NFT and the future of the Metaverse.**

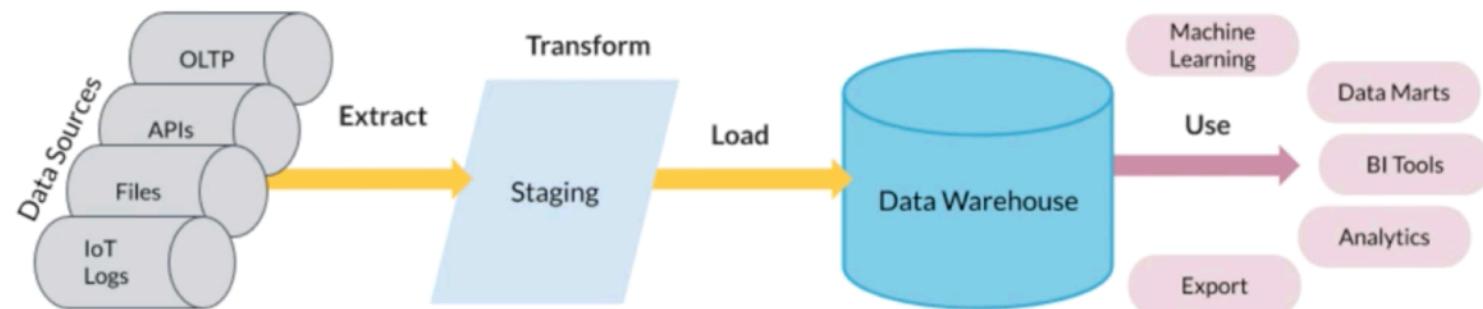
# **Serverless Data Warehouse & Machine Learning**



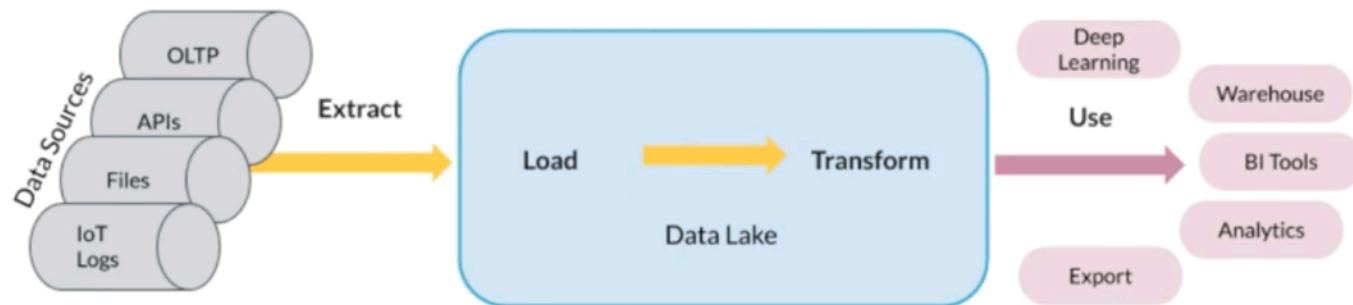




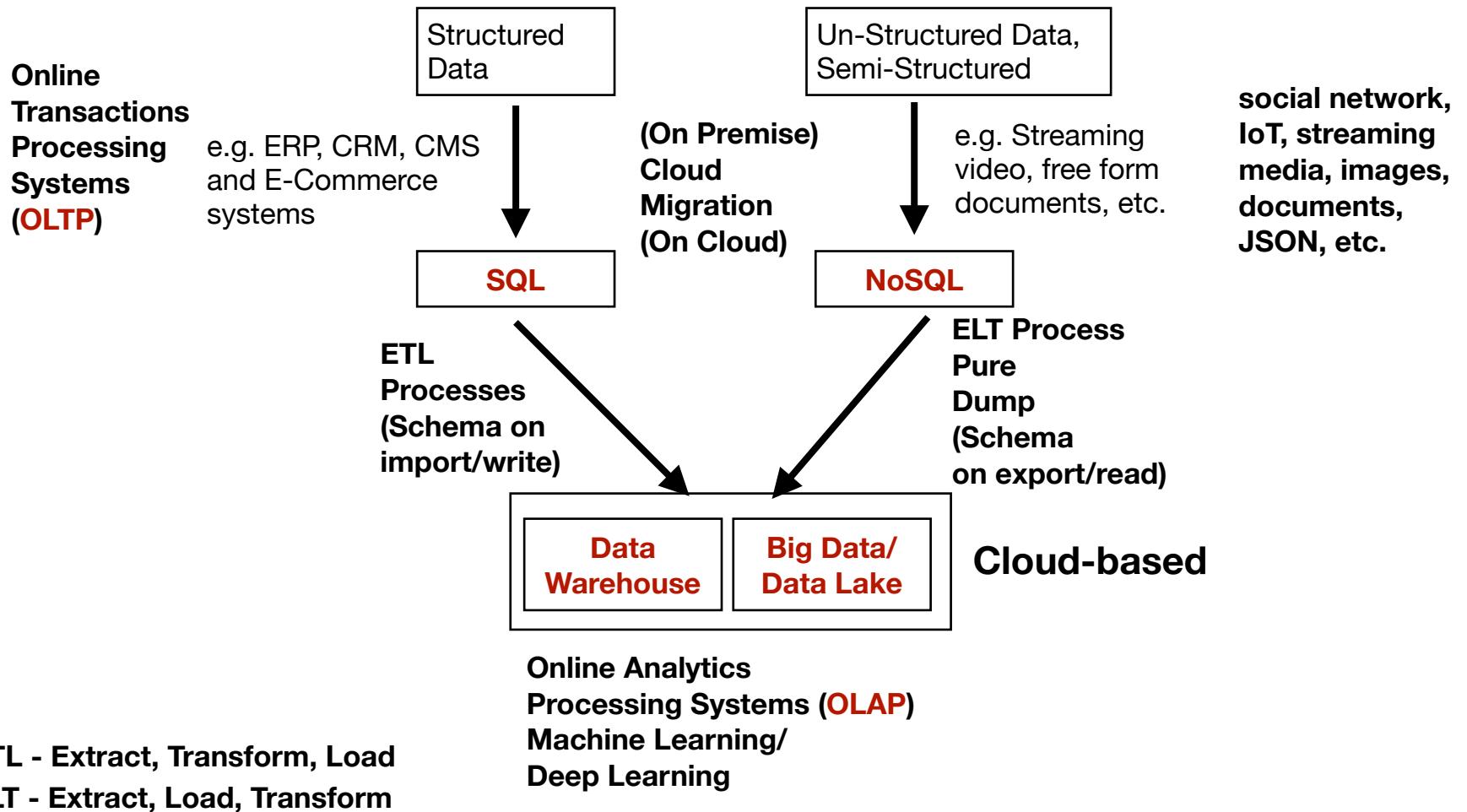
# ETL



# ELT



Source: DataCamp



# Google BigQuery: a serverless data warehouse

Google BigQuery's cloud-based data warehouse and analytics platform uses a built-in query engine and a highly scalable serverless computing model to process terabytes of data in seconds and petabytes in minutes.

BigQuery is a fast, powerful, and flexible [data warehouse](#) that's tightly integrated with the other services on Google Cloud Platform. It's cost-efficient, offers use-based pricing, and uses a serverless model.

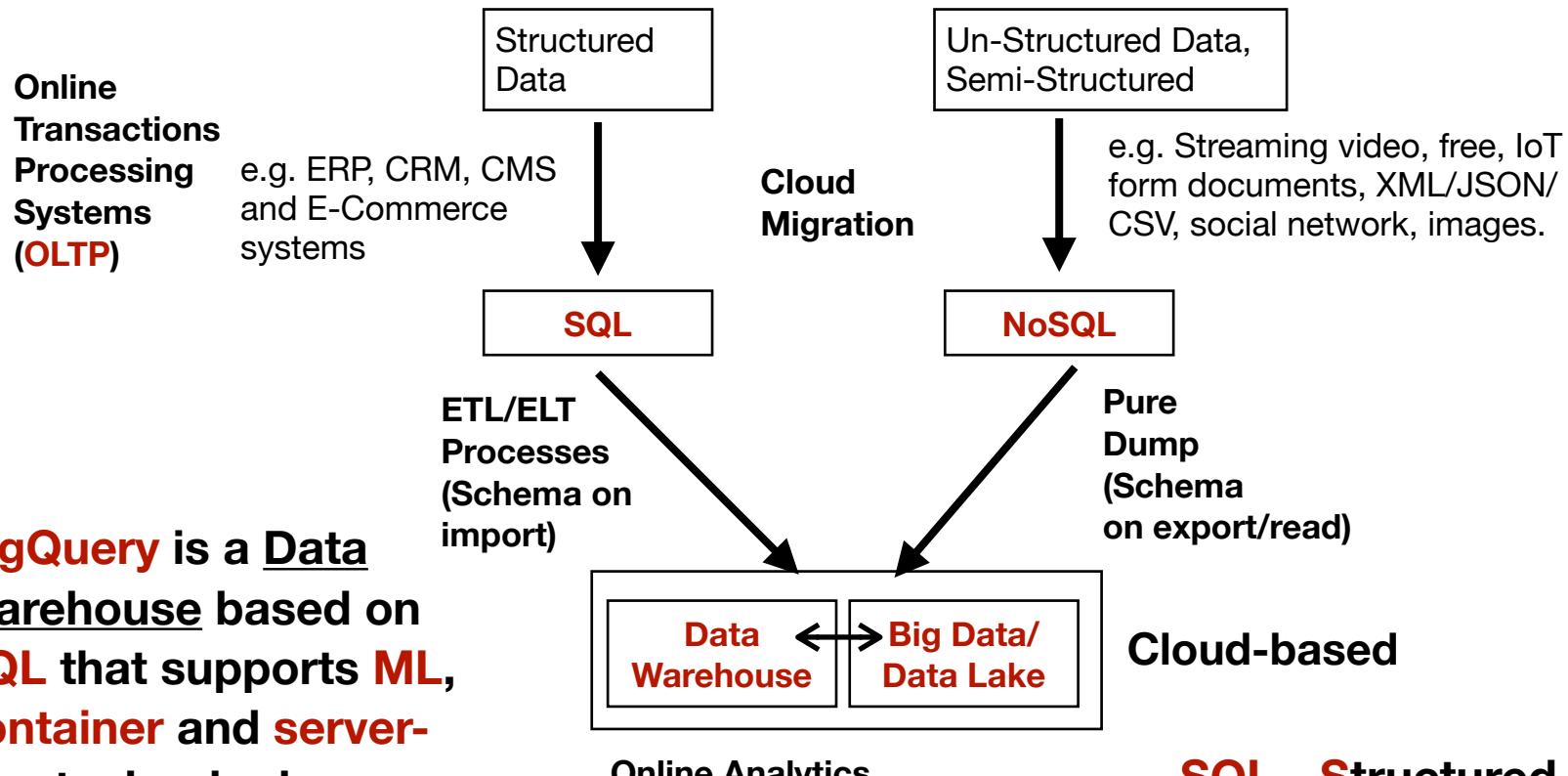
[Learn about Stitch's ETL tool for Google BigQuery data](#)

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## BigQuery's columnar database

BigQuery's column-based storage service is behind the data warehouse's speed and its ability to handle enormous quantities of data. Data in most relational databases is stored and accessed by row, and that's an efficient storage scheme for transactional databases. For analytical databases,



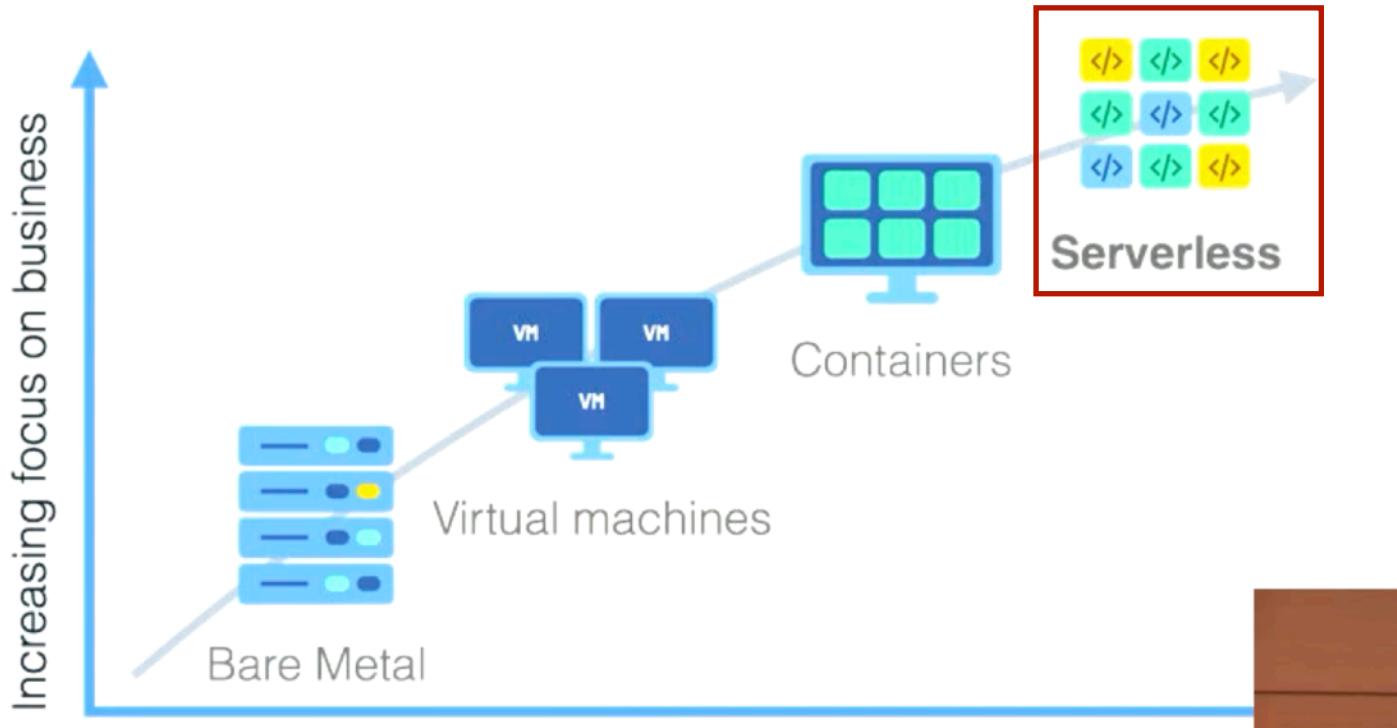


**BigQuery is a Data Warehouse based on **SQL** that supports **ML**, **container** and **server-less** technologies.**

ETL - Extract, Transform, Load  
ELT - Extract, Load, Transform

Online Analytics Processing Systems (**OLAP**)  
Machine Learning/  
Deep Learning

**SQL - S**tructured **Q**uery **L**anguage

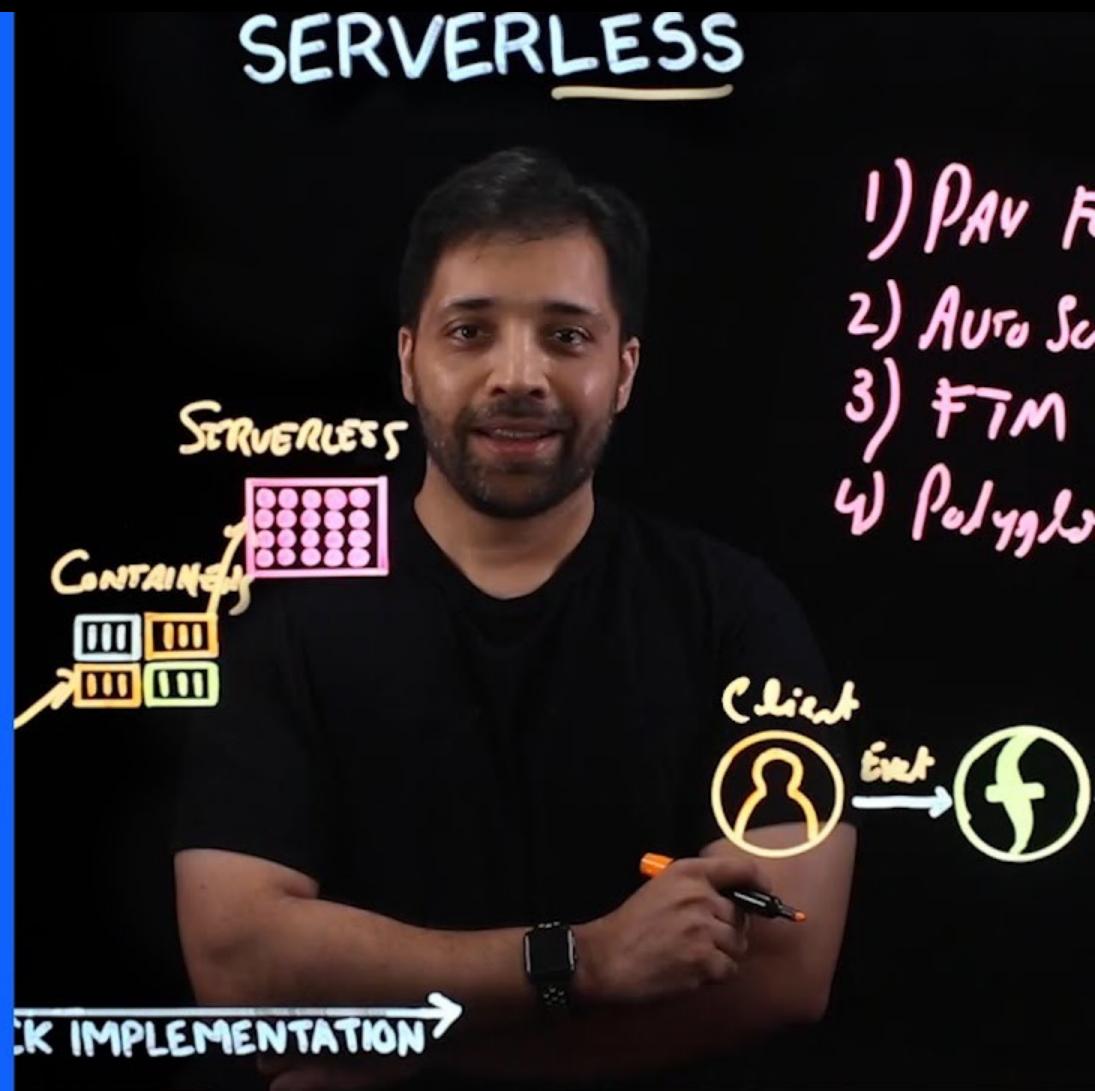


Source: IBM

**What is a serverless?  
Introducing Function as a Service (FaaS).**

# What is Serverless?

IBM Cloud





# AWS Lambda

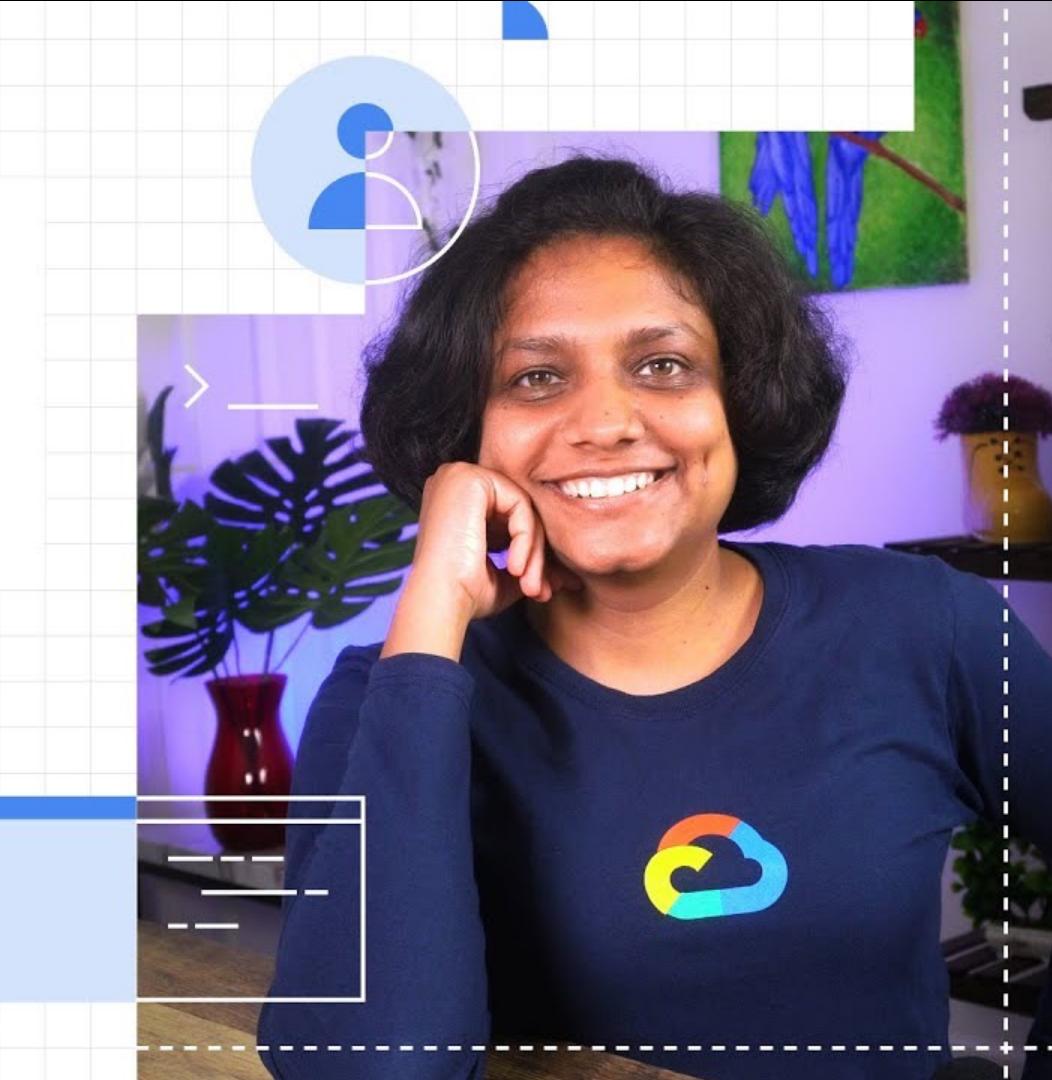


# Python



# Serverless Website

# How to build APIs for serverless workloads



Source: <https://www.youtube.com/watch?v=X1zTb3k60ow>

The screenshot shows the Microsoft Azure Functions portal interface. On the left, there's a sidebar with various navigation options like Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Security, Events (preview), Functions, App keys, and App settings. The 'Functions' option is currently selected.

The main area displays a list of functions under the 'Function App' 'tipscustomerapi'. It includes columns for Name (with a count of 1) and Trigger (with a count of 1). A search bar at the top allows filtering by name. Below the table, it says 'No results.'

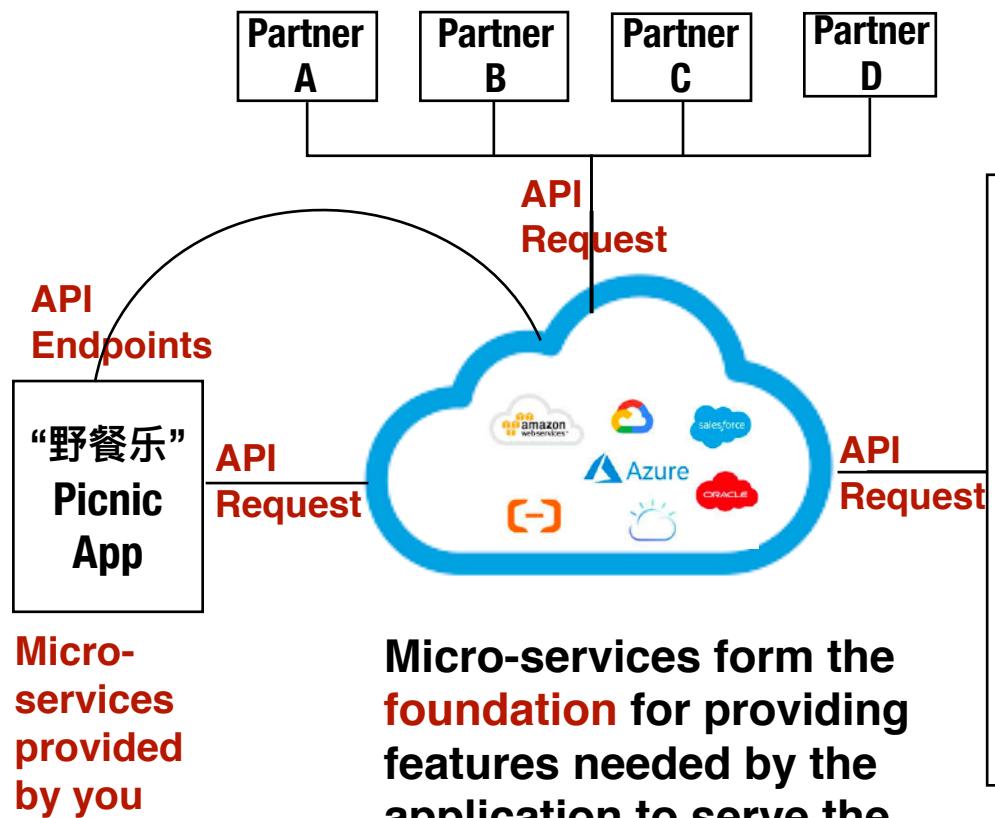
A modal window titled 'Add function' is open on the right. It has a section for 'your functions. Learn more.' and a 'Filter' button. A list of function types is provided with descriptions:

- SendGrid: A function that sends a confirmation e-mail when a new item is added to a particular queue.
- Azure Event Grid trigger: A function that will be run whenever an event grid receives a new event.
- Durable Functions HTTP trigger: A function that will trigger whenever it receives an HTTP request to execute an orchestrator function.
- Durable Functions activity: A function that will be run whenever an activity is called by an orchestrator function.
- Durable Functions orchestrator: An orchestrator function that invokes activity functions in a sequence.
- RabbitMQ trigger: A function that will be run whenever a message is added to a specified RabbitMQ queue.
- SignalR negotiate HTTP trigger: An HTTP triggered function that SignalR clients will call to begin connection negotiation.

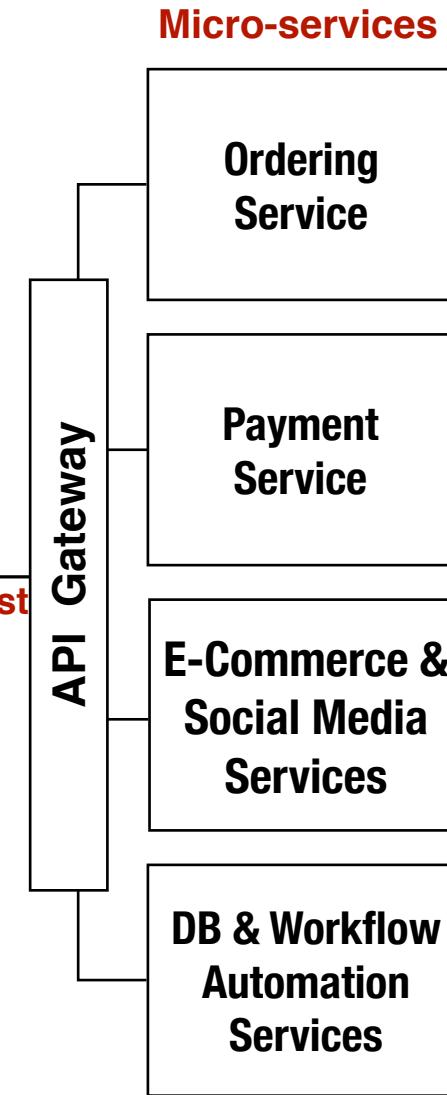
The 'Template details' section indicates that more information is needed to create the HTTP trigger function. It shows the 'Name Function\*' input field containing 'Http trigger1' and the 'Authorization level\*' dropdown set to 'Function'. At the bottom of the modal are 'Add' and 'Cancel' buttons.

Source: [https://www.youtube.com/watch?v=\\_9moXcR2Su0](https://www.youtube.com/watch?v=_9moXcR2Su0)

**Business partners requesting your services through API requests.**



**Micro-services form the foundation for providing features needed by the application to serve the ultimate users/customers**



# The Cloud Stack

- Google Map, Gmail
- Office 365, Adobe Cloud
- Zoom, Airtable

## SaaS (software as a Service)

e.g. **Zoom, Office 365, Adobe Cloud, Airtable, ParseHub**)

- OS, database server, lang runtime
- Back-end development tools and frameworks, web/app server
- Other AI/Big data, IOT, streaming support

## PaaS (Platform as a Service)

e.g. **PythonAnywhere, Pantheon**

- Virtual machine, hardware servers
- Load balancing, networking, storage, routers, security, 7/24 uninterrupted power supply

## IaaS (Infrastructure as a Service)

e.g. **AWS EC2, Azure VM**

**Private Cloud / Hybrid Cloud / Public Cloud**

# 云计算服务架构重组

Software as a Service

- Email, Map, Commerce
- Group Productivity/SN
- Matching/Lifestyle/Games

Function as a Service

- Serverless (e.g. Lambda, Cloud Run)
- Process & scalability on demand
- API/Event Driven/idle time no cost

Platform as a Service

- Web/App Server
- Lang/Software Framework
- Staging/API supports

Container as a Service

- Container Mgmt (e.g. Kubernetes)
- Container (e.g. Docker)
- Micro-service

Infrastructure as a Service

- Virtual Machines/OS
- Compute/Storage/Network/Hardware

End-User Oriented

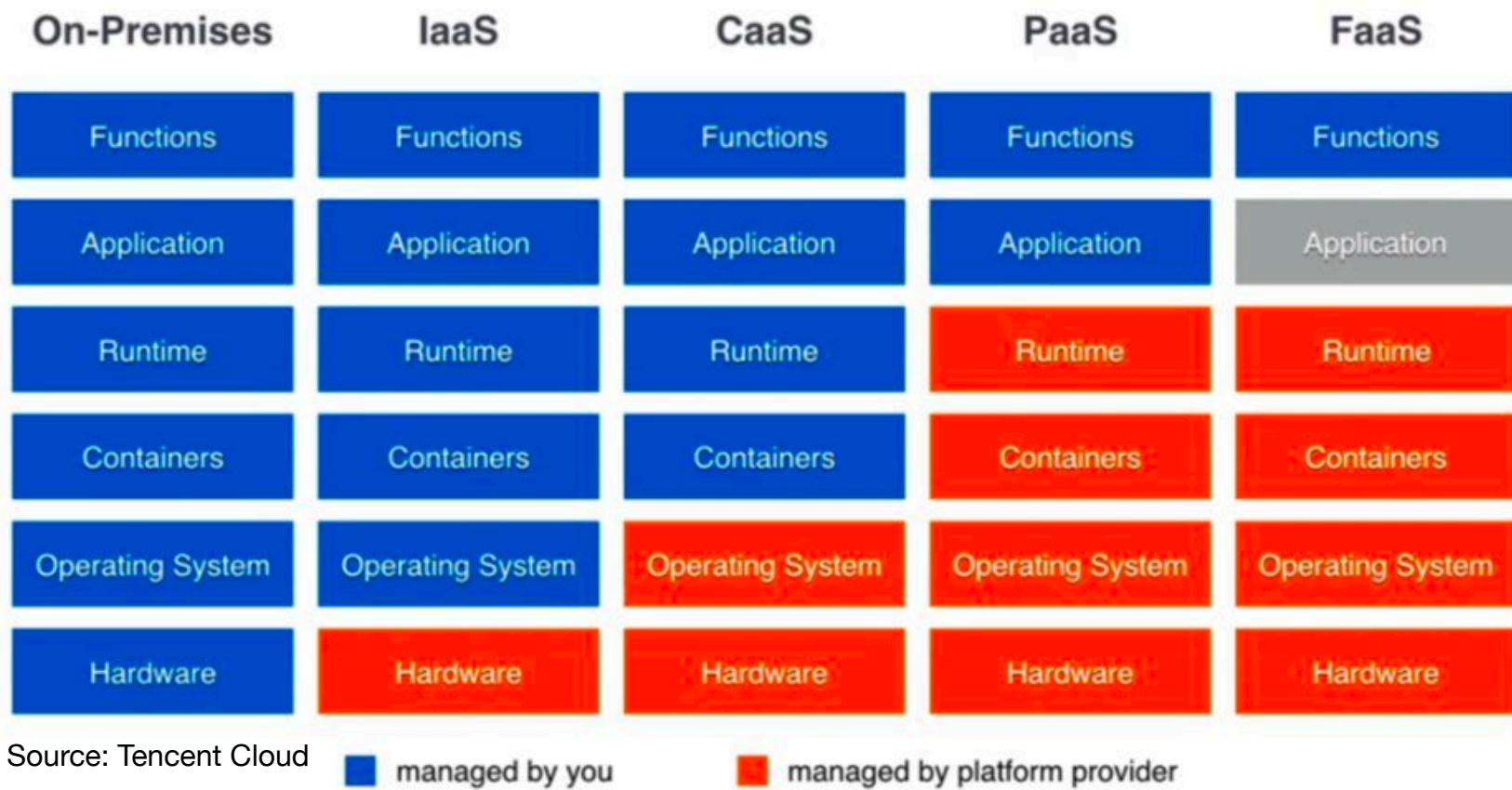
Clients

- Web Browser
- Mobile App
- IoT products

Developer Oriented

**Public/Private/Hybrid Clouds**

# 云计算的发展



Source: Tencent Cloud

# 为什么说每个开发者都应该关注Serverless ?



快科技

发布时间：03-27 15:56 | 快科技官方百家号

如果说云计算是过去、现在和未来，那么Serverless就是云计算的未来。Gartner报告中表明，2020年全球将有20%的企业部署Serverless。Serverless以其学习成本低、运维友好、灵活性高的特点为开发、运维团队所喜爱，在国内外也开始走上了大规模考察乃至实践的应用之路。

但不可否认的是，Serverless还没有出现最佳实践，国内外也都处在探索的过程中。3月21日，腾讯云TVP技术闭门会请来了国内外Serverless技术的佼佼者、使用者坐而论道，共话Serverless从概念到实践的发展之路。

## 作者最新文章

都说自己是影像旗舰 为何只有华为P40系列真正占住了？

云存储BackBlaze达成1EB硬盘：视频电话能打237823年

新华社：物理学发现招揽黑体

<https://cloud.tencent.com/developer/article/1610799>



Serverless 大咖说

“

腾讯内部支持微信小程序等核心应用的serverless技术，已对所有用户开放。提供一站式开发、部署，运维serverless解决方案。

”

*Yunong Xiao*

· 腾讯云中间件 总经理兼首席架构师

眺望曙光

TVP技术闭门会线上特辑

TVP Tencent Cloud  
Valuable Professional

Serverless 大咖说

”

Serverless 是一种未来的开发方式，属于每一个开发者。

”

*王俊杰*

· 腾讯云 Serverless 技术专家

眺望曙光

TVP技术闭门会线上特辑

Source: 快科技



首页

发现

等你来答

国内版 N 号房事件



前端开发

云服务

前端工程师

后端工程师

Serverless

## 前端为什么要关注 Serverless?

最近打算做一个serverless的项目,思考时产生一个疑问: 前端为什么要接serverless这事? 交给后端不行吗? 不知道大家为什么在一直说什么...[显示全部](#) ▾

关注问题

写回答

+ 1 邀请回答

添加评论

分享

...

37 个回答

默认排序



腾讯云 Serverless

<https://www.zhihu.com/question/378776917>

# Serverless爆发，AWS微软卡位，腾讯云阿里云华为云紧跟

发布时间：2020-03-17 17:47:55 来源：中国软件网 作者：刘学习



[摘要]Serverless落地应用增多，市场格局初定，云服务商纷纷试水，机会与挑战并存。

3月10日，云原生基金会CNCF发布了2019年年度调查报告。41%的受访者表示已经在使用无服务器Serverless计算，20%的受访者表示计划在未来12-18个月应用Serverless计算。

之前的3月1日，市场研究机构Forrester发布的最新报告认为，Serverless计算的兴起，让FaaS成为继IaaS、PaaS、SaaS之后一种新的云计算能力提供方式。

在Serverless计算最主要的技术方向——函数即服务平台(FaaS)方面，AWS、微软两家企业居于领导者象限，腾讯云、阿里云与谷歌云、Nimbell、IBM、Cloudflare等处于强劲表现者象限，Oracle则处于挑战者象限。

云计算企业已经习惯了“大投入有大回报”的行业规律。从2014年开始，云服务商不管是AWS、微软、谷歌云，还是国内的阿里云、腾讯云、华为云、百度智能云等，在Serverless上都有大笔投入。

2020年，Serverless服务市场将迎来大爆发的机会。而现在Serverless服务市场新座次的排

## 案例解读

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临矿集团：浪潮云+助力开启数字化新征程

## 每日新闻

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- 3月27日：华为开发者大会鲲鹏+昇腾产业布局；中国光通信企业遭遇美国调查
- 3月26日：中国新建4G和5G基站超6.3万个；任

<https://www.163.com/dy/article/F7V7VSUF053109Y0.html>

3月25日 16:00–17:00

## 直播 | 挑战不可能！闲鱼Serverless + Flutter研发效率提升30%

阿里技术 2020-03-25



随着无线、小程序、IoT的发展、5G的到来，移动研发越来越向多端化发展。传统的移动架构存

The promotional banner has an orange hexagonal background pattern. At the top left is the Alibaba Group logo. Next to it is the TAO TECHNOLOGY logo with the text '淘系技术部'. Below the logos, the title '淘系云原生时代的业务研发' and subtitle '闲鱼serverless云端一体化研发实践' are displayed. A photo of a speaker, Yang Yu, is shown with his name '扬羽' and title '演讲嘉宾'. The broadcast time '直播时间' is listed as '3月25日 16: 00–17: 00'. The '分享大纲' section lists five points: '闲鱼无线架构以及云端一体化模式新机会', '一体化研发的核心挑战与解法', '业务落地以及带来的价值', and '展望'. There is also a decorative graphic of overlapping 3D cubes in the bottom right corner.

Alibaba Group 阿里巴巴集团 TAO TECHNOLOGY 淘系技术部

### 淘系云原生时代的业务研发 闲鱼serverless云端一体化研发实践

演讲嘉宾  
**扬羽**

阿里巴巴淘系技术部闲鱼 技术专家  
闲鱼架构组成员,负责serverless、  
云端一体化研发模式在闲鱼的探索和落地

直播时间  
3月25日 16: 00–17: 00

分享大纲

- ◆ 闲鱼无线架构以及云端一体化模式新机会
- ◆ 一体化研发的核心挑战与解法
- ◆ 业务落地以及带来的价值
- ◆ 展望

# **Why the widespread interest?**

**Serverless (FaaS) doesn't charge for idle time (Since no VM instance is running).**

# Comparison Between CaaS/PaaS and FaaS

	PaaS	FaaS
Ease of Setup	X (with containers)	X
Maintenance of Platform	X	Minimal
Setup of App Servers	X	Minimal
No Payment for Idle Time		X
Control Over App Stack vs. Functions	<b>App Stack and API</b>	<b>API Triggered Functions</b>

# The Rise of DevOps



## DevOps到底是什么意思？

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转自 | 鲜枣课堂

作者 | 小枣君

提到DevOps这个词，我相信很多人一定不会陌生。

作为一个热门的概念，DevOps近年来频频出现在各大技术社区和媒体的文章中，备受行业大咖的追捧，也吸引了很多吃瓜群众的围观。

那么，DevOps是什么呢？

有人说它是一种方法，也有人说它是一种工具，还有人说它是一种思想。更有甚者，说它是一种哲学。

越说越玄乎，感觉都要封神啦！DevOps这玩意真的有那么夸张吗？它到底是干嘛用的？为什么行业里都会对它趋之如鹜呢？

虽然敏捷开发大幅提升了软件开发的效率和版本更新的速度，但是它的效果仅限于开发环节。研发们发现，运维那边，依旧是铁板一块，成为了新的瓶颈。

运维工程师，和开发工程师有着完全不同的思维逻辑。运维团队的座右铭，很简单，就是“稳定压倒一切”。运维的核心诉求，就是不出问题。

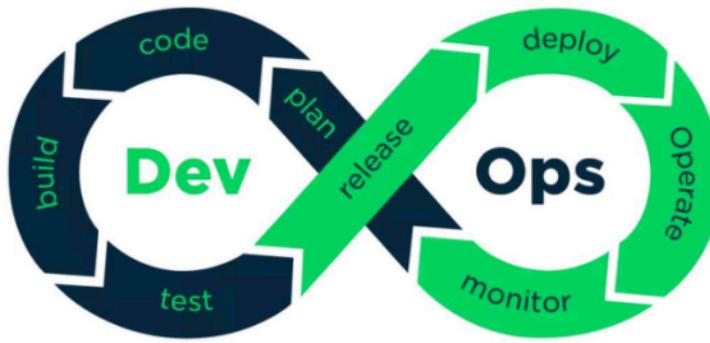
什么情况下最容易出问题？发生改变的时候最容易出问题。所以说，运维非常排斥“改变”。

于是乎，矛盾就在两者之间集中爆发了。

这个时候，我们的DevOps，隆重登场了。

DevOps到底是什么

DevOps这个词，其实就是Development和Operations两个词的组合。它的英文发音是 /də'vɔps/，类似于“迪沃普斯”。



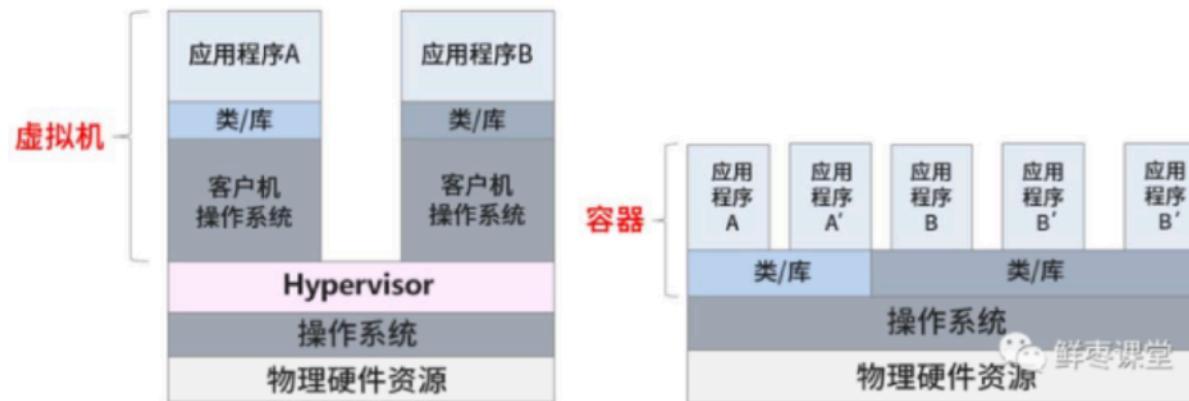
DevOps的维基百科定义是这样的：

DevOps是一组过程、方法与系统的统称，用于促进开发、技术运营和质量保障（QA）

**微服务架构下**，不同的工程师可以对各自负责的模块进行处理，例如开发、测试、部署、迭代。

**而虚拟化**，其实就是一种敏捷的云计算服务。它从硬件上，将一个系统“划分”为多个系统，系统之间相互隔离，为微服务提供便利。

**容器就更彻底了**，不是划分为不同的操作系统，而是在操作系统上划分为不同的“运行环境”（Container），占用资源更少，部署速度更快。



明白了吧？虚拟化和容器，其实为DevOps提供了很好的前提条件。开发环境和部署环境都可以更好地隔离了，减小了相互之间的影响。



**Container saves time.**

**Serverless saves money.**

**DevOps integrate the two into agile development.**

**Implications for your final project and job application.**

1. Agile SCRUM development needs infrastructure and operational (i.e. DevOp) support as development and production blur together due to shorter product cycles.
2. Product manager needs to know the trade-offs in using different infrastructure components and services to cut development costs and time.
3. As team members need to collaborate across disciplines, having someone with full-stack development and operation skills (e.g. DevOps) and experience on the team will enable better integration.
4. As a result, a project manager has to be well-rounded enough to scout talents with cross-disciplinary capabilities to help bridge the gaps.

# **From Web 2.0 to Web 3.0**

- Augment Reality
- Virtual Reality
- Mixed Reality
- Avartar Tech (Metaverse)
- Embient & Experiential Tech

## Embodied Internet

- Personalise content
- Recommend content and products
- Segment and match members
- Detect transaction fault and business risks
- Predict sales growth and optimise inventory
- ML/DL enabled UI (e.g. face, voice, and fingerprint recognition)

- Assemble structured & unstructured customer data for profiling trends
- Add smart devices & data to network
- Build enterprise data warehouse and data lake
- Enable streaming services

## Big Data

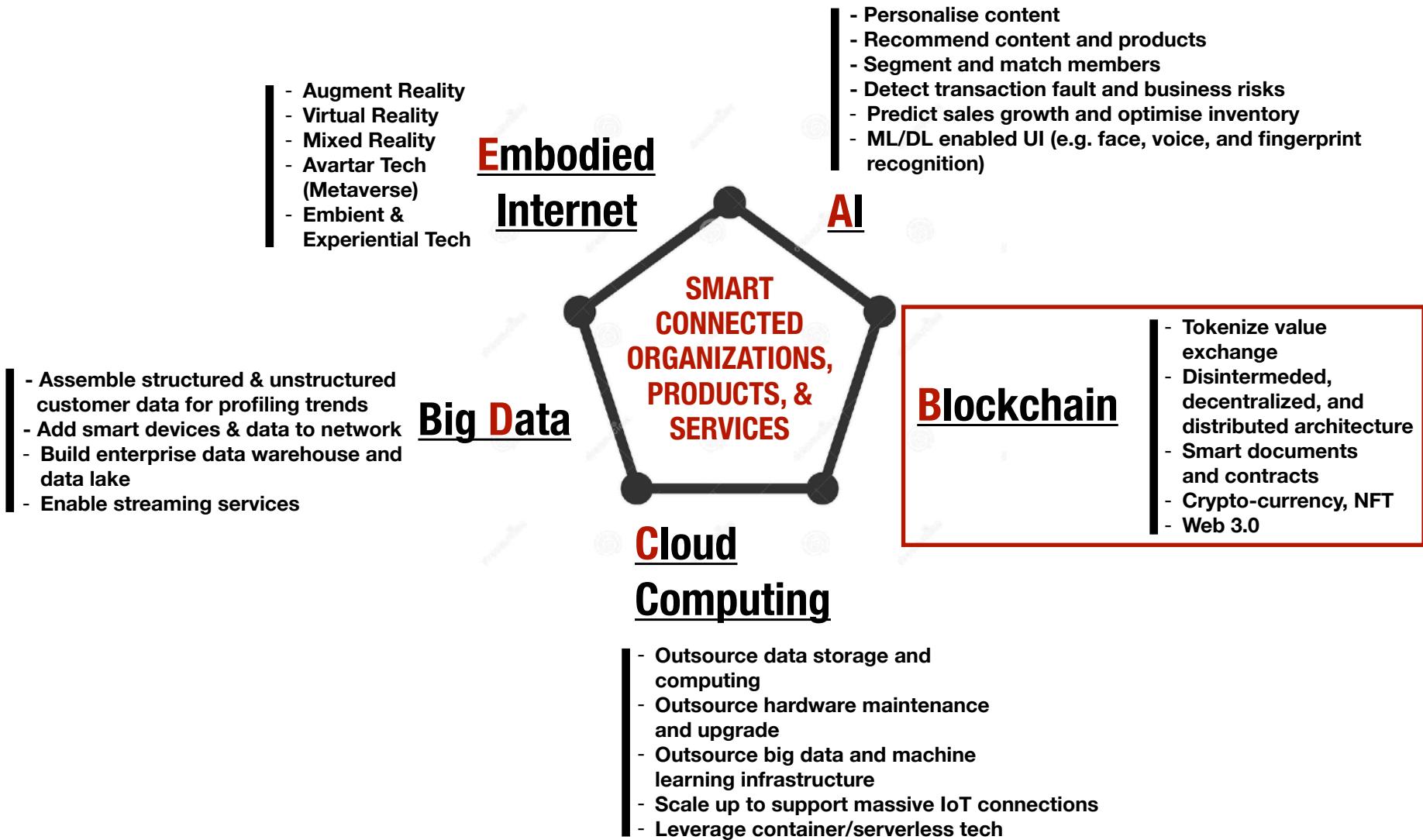
**SMART  
CONNECTED  
ORGANIZATIONS,  
PRODUCTS, &  
SERVICES**

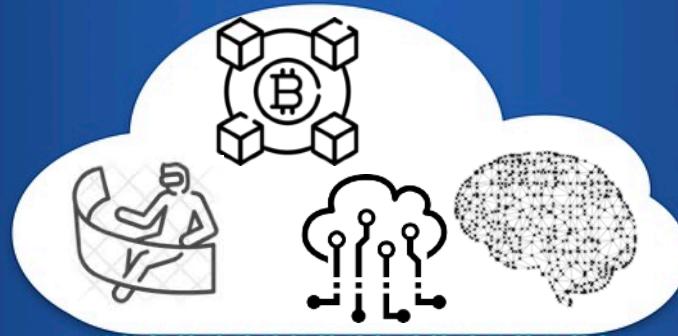
## Blockchain

- Tokenize value exchange
- Disintermediated, decentralized, and distributed architecture
- Smart documents and contracts
- Crypto-currency, NFT
- Web 3.0

## Cloud Computing

- Outsource data storage and computing
- Outsource hardware maintenance and upgrade
- Outsource big data and machine learning infrastructure
- Scale up to support massive IoT connections
- Leverage container/serverless tech





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**Web 2.0: Who rules the platform will rule the world.**



## Web 2.0: Compact Definition?

by [Tim O'Reilly](#) | [@timoreilly](#) | [+Tim O'Reilly](#) | October 1, 2005



I said [I'm not fond of definitions](#), but I woke up this morning with the start of one in my head:

Web 2.0 is the network as platform, spanning all connected devices; Web 2.0 applications are those that make the most of the intrinsic advantages of that platform: delivering software as a continually-updated service that gets better the more people use it, consuming and remixing data from multiple sources, including individual users, while providing their own data and services in a form that allows remixing by others, creating network effects through an “architecture of participation,” and going beyond the page metaphor of Web 1.0 to deliver rich user experiences.

<http://radar.oreilly.com/2005/10/web-20-compact-definition.html>



Tencent 腾讯

Baidu 百度



Microsoft

Alphabet

amazon





Industry innovation and disruption comes from digital and technology platforms.



# NETFLIX

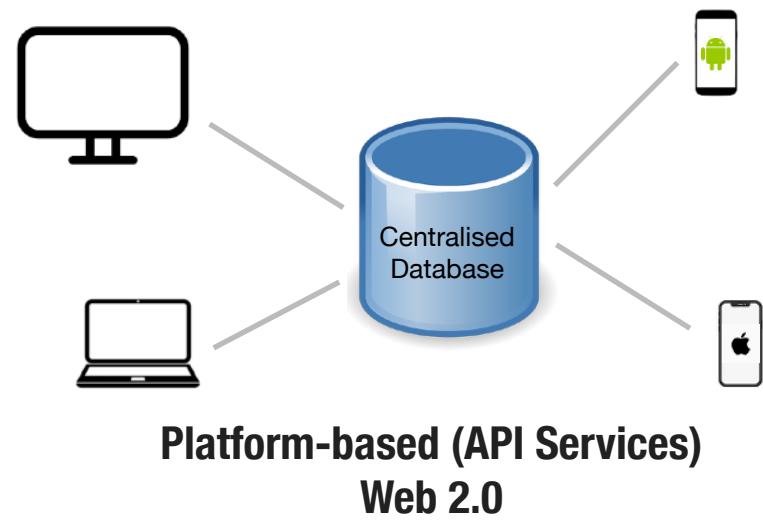
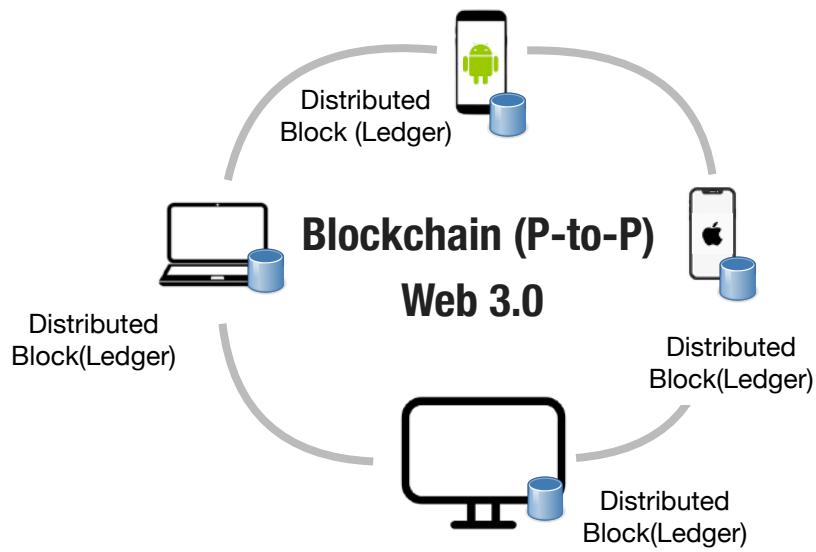


Industry innovation and disruption comes from digital and technology platforms.

# China vs. US – Top Players for Key Verticals



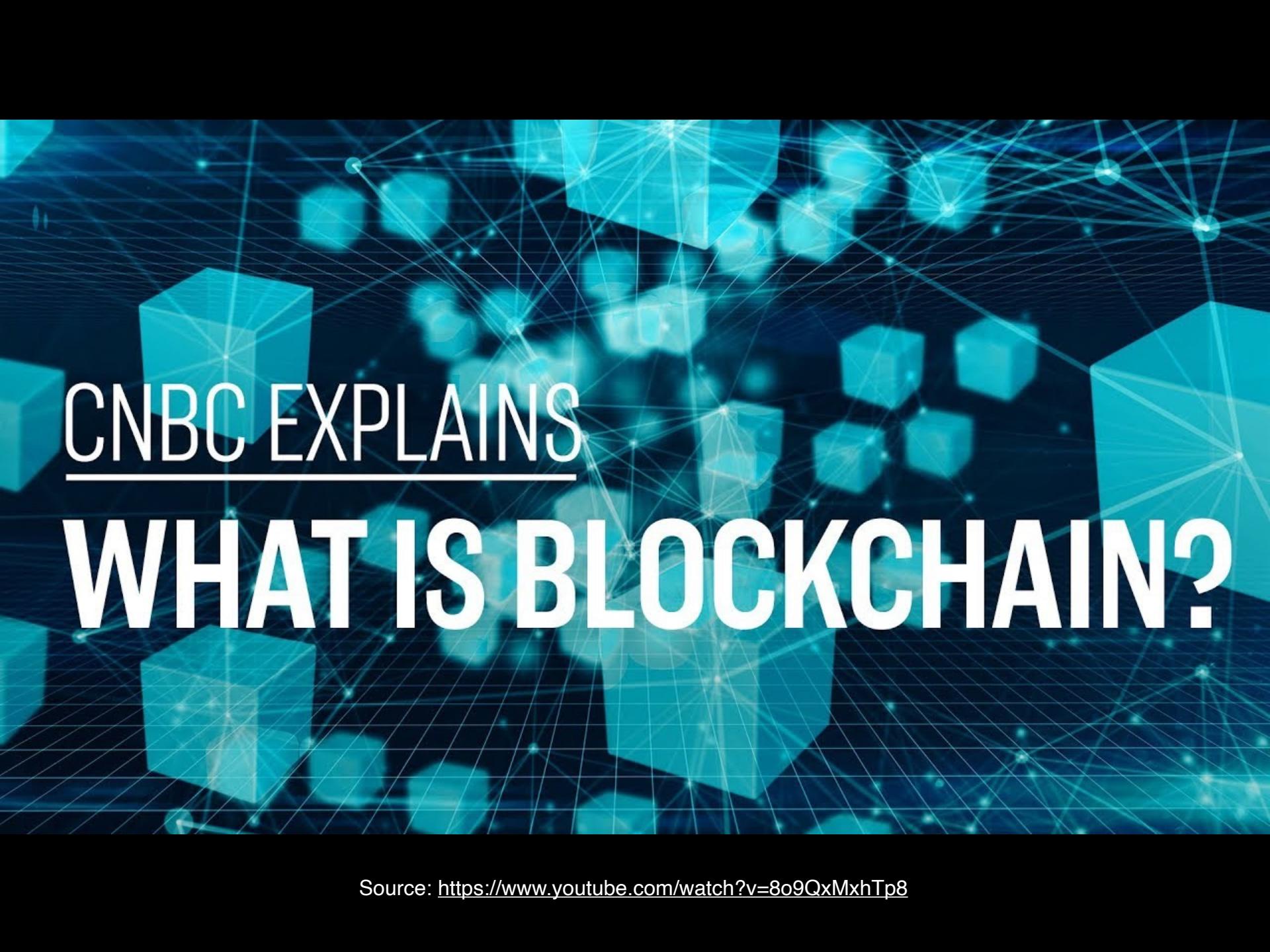
Source: China Internet Report 2018





**Web 3.0: No More Rulers. Rules are Based on Consensus.**

1. Whose problem (who) does Blockchain solve?
2. What is Blockchain?
3. Why Blockchain?
4. How Blockchain works?
5. How much question? How is “value” determined through crypto currency or digital token in the chain?



CNBC EXPLAINS

# WHAT IS BLOCKCHAIN?

Source: <https://www.youtube.com/watch?v=8o9QxMxhTp8>

# **Why Use Blockchain?**

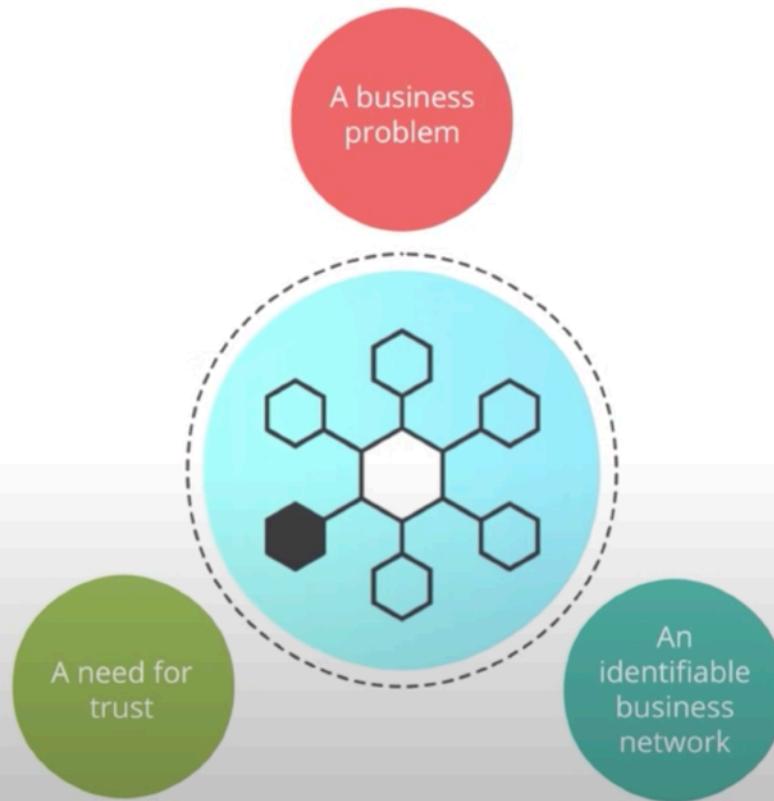
**We have proposed a system for electronic transactions without relying on trust.**

–Satoshi Nakamoto

- 1. Decentralization (Disintermediation)**
- 2. Censorship Resistant**
- 3. Trustless**
- 4. Transparency**
- 5. Immutable**

## Identifying a Blockchain Use Case

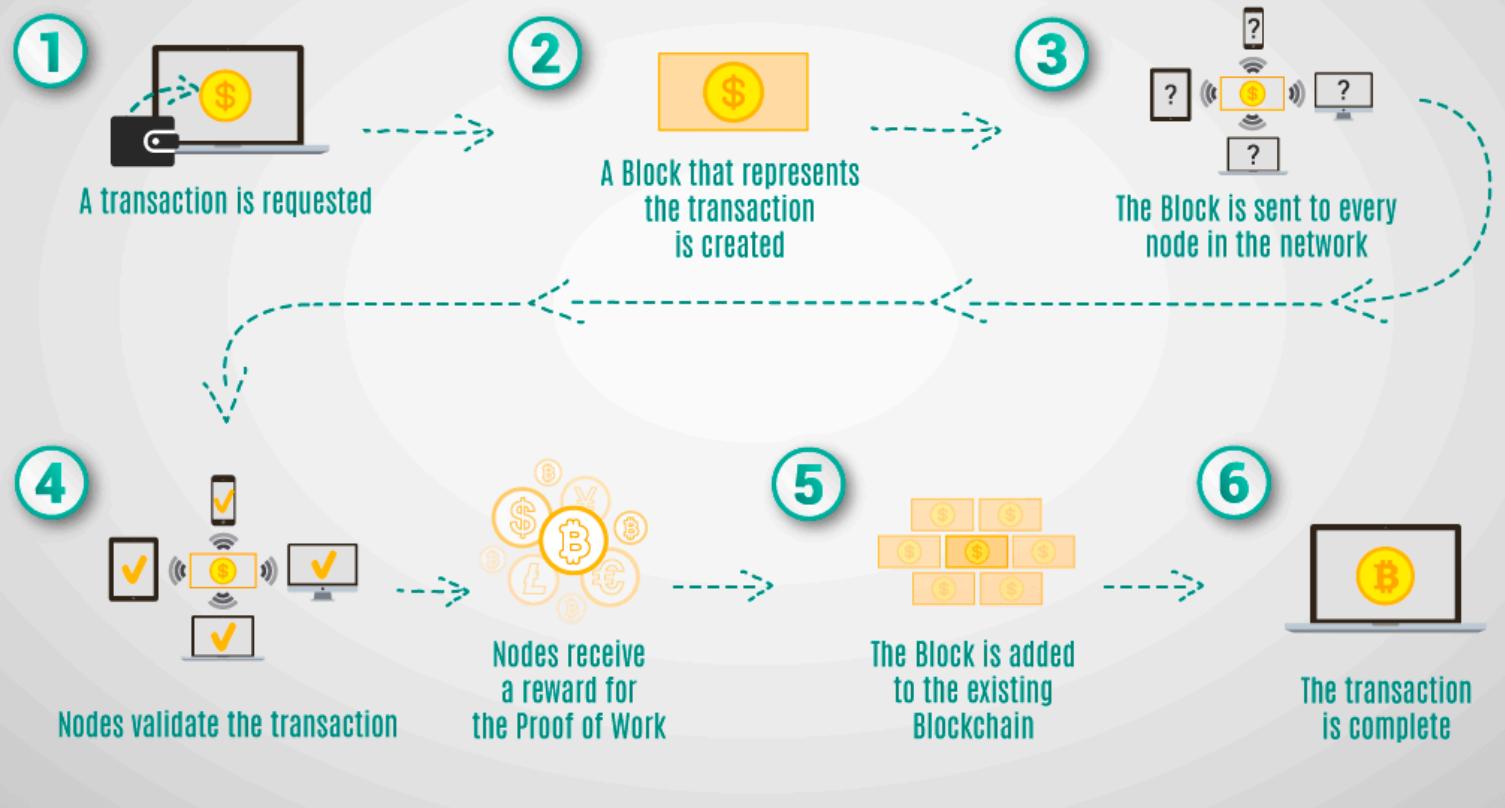
A good Blockchain use case should have the following:



Source: [Simplilearn](#)

# **How does Blockchain work?**

# HOW BLOCKCHAIN WORKS



Source: <https://mlsdev.com/blog/156-how-to-build-your-own-blockchain-architecture>

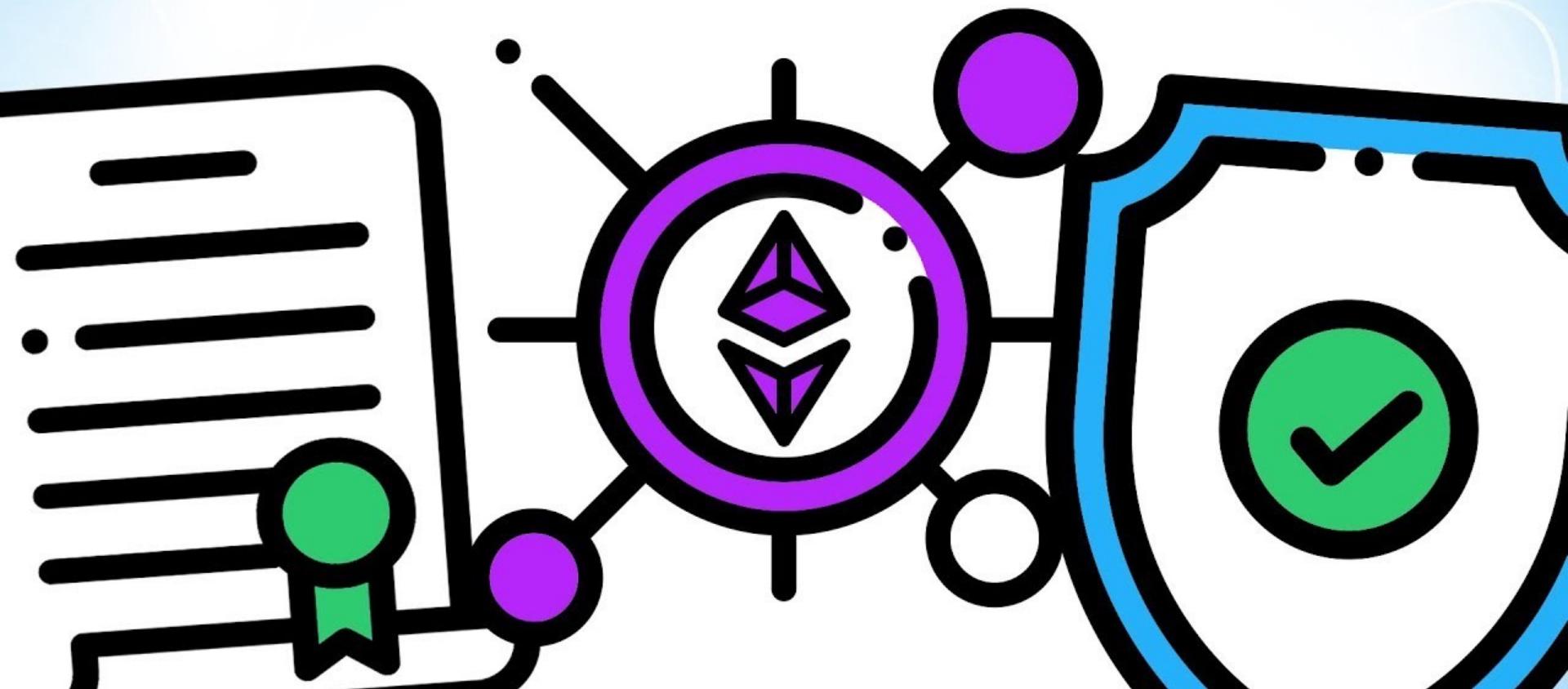
# **5 Key Elements of How Blockchain Works: Solving the Trust Problem in a Decentralised Network**

1. P-to-P Network (Decentralised 去中心化 network with each node on the network having equal right of access)
2. Cryptography (Private/Public Key - Digital Signature)
3. Consensus Rules (Proof of Work/Proof of Stake)
4. Incentive Mechanism (Mining and validation fee, deposit)
5. Market Adoption

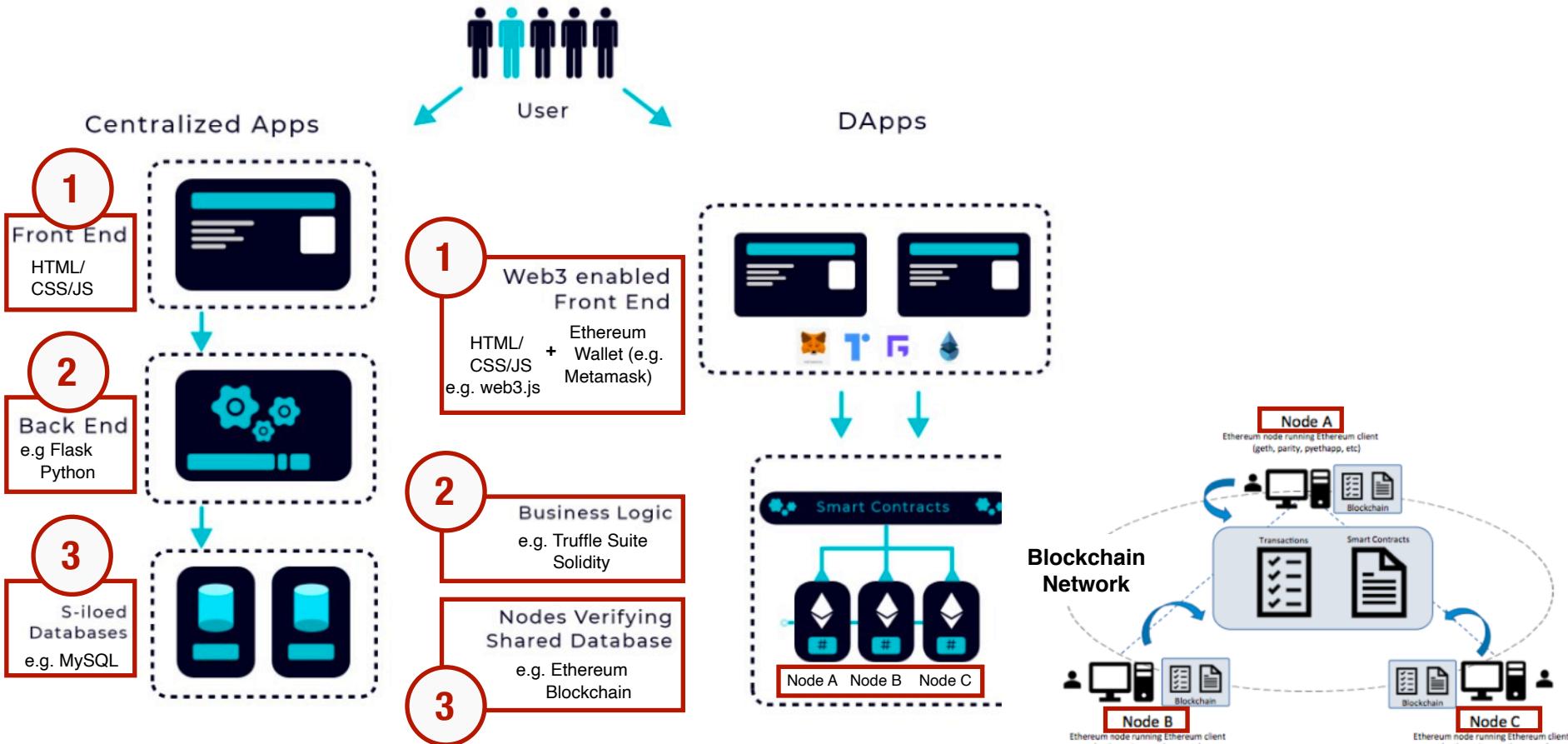
Source: 99Bitcoins

# **Application of Blockchain Beyond Crypto-Currency (e.g. Bitcoin)**

# What is Ethereum?



Source: <https://www.youtube.com/watch?v=lsXvoYeJxKA>



Prone to Attacks, Frauds and Central Point of Failure

Security by Cryptography, and no Central Point of Failure

Source: <https://docs.biconomy.io/tutorials/native-metatransactions/how-to-build-your-first-dapp>

Source: <https://medium.com/@rajiv.cheriyan/lets-get-started-with-your-first-ethereum-dapp-109feb59dd78>

# **From Proof-of-Work (POW) to Proof-of-Stake (POS)**



# **Proof-of-stake**

— *Simply explained* —

Source: [https://www.youtube.com/watch?v=M3EFi\\_POhps](https://www.youtube.com/watch?v=M3EFi_POhps)

# **Programming Languages for Decentralized Applications (DApps) Development**

## USER DOCUMENTATION

[Getting Started](#)[Callbacks Promises Events](#)[Glossary](#)

## API REFERENCE

[Web3](#)[web3.eth](#)[web3.eth.subscribe](#)[web3.eth.Contract](#)[web3.eth.accounts](#)[web3.eth.personal](#)[web3.eth.ens](#)[web3.eth.iban](#)[web3.eth.abi](#)[web3.\\*.net](#)[web3.bzz](#)[web3.shh](#)[web3.utils](#)

Let's Talk Docs: A podcast interviewing folks with new approaches

# web3.js - Ethereum JavaScript API

web3.js is a collection of libraries that allow you to interact with a local or remote ethereum node using HTTP, IPC or WebSocket.

The following documentation will guide you through [installing and running web3.js](#) as well as providing an API reference documentation with examples.

Contents:

[Keyword Index](#), [Search Page](#)

## User Documentation

- [Getting Started](#)
  - [Adding web3.js](#)
- [Callbacks Promises Events](#)
- [Glossary](#)
  - [json interface](#)

## API Reference

- [Web3](#)
  - [Web3.modules](#)
  - [Web3 Instance](#)
  - [version](#)
  - [utils](#)
  - [setProvider](#)
  - [providers](#)
  - [givenProvider](#)
  - [currentProvider](#)
  - [BatchRequest](#)
  - [extend](#)

Source: <https://web3js.readthedocs.io/en/v1.7.1/>



v0.8.13

Search docs

## BASICS

- Introduction to Smart Contracts
- Installing the Solidity Compiler
- Solidity by Example

## LANGUAGE DESCRIPTION

- Layout of a Solidity Source File
- Structure of a Contract
- Types
- Units and Globally Available Variables
- Expressions and Control Structures
- Contracts
- Inline Assembly
- Cheatsheet
- Language Grammar

## COMPILER

- Using the Compiler
- Analysing the Compiler Output
- Solidity IR-based Codegen Changes

## INTERNAL

- Layout of State Variables in Storage

RTD

v: v0.8.13 ▾

[» Solidity](#)[Edit on GitHub](#)

# Solidity

Solidity is an object-oriented, high-level language for implementing smart contracts. Smart contracts are programs which govern the behaviour of accounts within the Ethereum state.

Solidity is a [curly-bracket language](#) designed to target the Ethereum Virtual Machine (EVM). It is influenced by C++, Python and JavaScript. You can find more details about which languages Solidity has been inspired by in the [language influences](#) section.

Solidity is statically typed, supports inheritance, libraries and complex user-defined types among other features.

With Solidity you can create contracts for uses such as voting, crowdfunding, blind auctions, and multi-signature wallets.

When deploying contracts, you should use the latest released version of Solidity. Apart from exceptional cases, only the latest version receives [security fixes](#). Furthermore, breaking changes as well as new features are introduced regularly. We currently use a 0.y.z version number [to indicate this fast pace of change](#).

### Warning

Solidity recently released the 0.8.x version that introduced a lot of breaking changes. Make sure you read [the full list](#).

Ideas for improving Solidity or this documentation are always welcome, read our [contributors guide](#) for more details.

### Hint

You can download this documentation as PDF, HTML or Epub by clicking on the versions flyout menu in the bottom-left corner and selecting the preferred download format.

Source: <https://docs.soliditylang.org/en/v0.8.13/>

# **Smart Contract: a decentralised app (**dApp**) as the Basic Building Block**

Introducing Truffle Dashboard Stop copy + pasting your private keys!



HOME DOCUMENTATION GUIDES TUTORIAL BOXES BLOG COMMUNITY

# Sweet Tools for Smart Contracts

The **Truffle Suite** gets developers from idea to dapp as comfortably as possible.



Source: <https://trufflesuite.com/>

The screenshot shows the Remix IDE interface. On the left, there's a sidebar with various icons and a "FILE EXPLORERS" section. The "default\_workspace" is selected, showing a folder structure with "contracts", "scripts", "tests", and "README.txt". Above the workspace list are search and refresh icons, and a "Home" button.

In the center, the main area features a large "Remix IDE" logo with a cartoon character holding a blue sword. Below it is a warning message: "⚠ Scam Alert: Beware of online videos promoting 'liquidity front runner bots'. [Learn more](#)".

Underneath the warning, there's a "Featured Plugins" section with cards for SOLIDITY, L2, STARKNET, SOLINT LINTER, LEARNETH, and SOURCIFY, along with a "MORE" option.

The interface is divided into sections: "File" (New File, Open Files, Connect to Localhost, Download Backup, Restore Backup) and "Resources" (Documentation, Gitter channel, Featuring website, Old experience). Below these are buttons for "LOAD FROM:" with options: Gist, GitHub, Ipfs, and https. The "Gist" button is currently selected.

At the bottom, there's a terminal-like interface with a search bar ("Search with transaction hash or address") and a list of accessible libraries:

```
The following libraries are accessible:  
• web3_version 1.5.2  
• ethers.js  
• remix  
  
Type the library name to see available commands.
```

Source: <https://remix.ethereum.org/>

# **Cryptography: Private/Public Key Authentication**

## What is JSON Web Token?

JSON Web Token (JWT) is an open standard ([RFC 7519](#)) that defines a compact and self-contained way for securely transmitting information between parties as a JSON object. This information can be verified and trusted because it is digitally signed.

JWTs can be signed using a secret (with the HMAC algorithm) or a public/private key pair using RSA or ECDSA.

Although JWTs can be encrypted to also provide secrecy between parties, we will focus on *signed tokens*. Signed tokens can verify the *integrity* of the claims contained within it, while encrypted tokens *hide* those claims from other parties. When tokens are signed using public/private key pairs, the signature also certifies that only the party holding the private key is the one that signed it.

## When should you use JSON Web Tokens?

Here are some scenarios where JSON Web Tokens are useful:

- **Authorization:** This is the most common scenario for using JWT. Once the user is logged in, each subsequent request will include the JWT, allowing the user to access routes, services, and resources that are permitted with that token.

Single Sign On is a feature that widely uses JWT nowadays, because of its small overhead and its ability to be easily used across different domains.

**Signed using a secret or public/private key pair.**

**JWT token is the approval code that authorises access.**

Source: <https://jwt.io/introduction>



Debugger Libraries Introduction Ask

Crafted by auth0

Algorithm RS256

## Encoded

PASTE A TOKEN HERE

```
eyJhbGciOiJSUzI1NiIsInR5cI6IkpxVCJ9.eyJdWIi0iIxMjM0NTY3ODkwIiwibmFtZSI6IkpvG4gRG9lIiwiYWRtaW4iOnRydWUsImlhCI6MTUxNjIzOTAyMn0.NHVaYe26Mbt0YhSKkoKYdFVomgi8ZJd8_-RU8VNbftc4TSMb4bXP3l3Y1NWACwyXPGffz5aXHc6lty1Y2t4SWRqGteragsVdZufDn5BlnJ19pdR_kdVFUsra2rWKEofkZeIC4yWytE58sMIihvo9H1ScmmVwBcQP6XETqYd0aSHp1g0a9RdUPDvoXQ5oqygTqVtxaDr6wUFKrKItgBMzWIdNZ6y709E0dhEPTbE9rfBo6KTFsHAZnMg4k68CDp2woYIaXbmYTWcvbzIuH07_37GT79XdIwkm95QJ7hYC9RiwrV7mesbY4PAahERJawntho0my942XheVLmGwLMBkQ
```

## Decoded

EDIT THE PAYLOAD AND SECRET

HEADER: ALGORITHM & TOKEN TYPE

```
"typ": "JWT"  
}
```

PAYOUT: DATA

```
"sub": "1234567890",  
"name": "John Doe",  
"admin": true,  
"iat": 1516239022  
}
```

VERIFY SIGNATURE

```
RSASHA256(  
base64UrlEncode(header) + "." +  
base64UrlEncode(payload),  
----- BEGIN PUBLIC KEY -----  
MIIBIjANBgkqhkiG9w0BAQEFAAOQCgKCAQEau1SUlfVLPHC  
ozMxH2Mo  
----- BEGIN PRIVATE KEY -----  
MIIEvwIBADANBgkqhkiG9w0BAQEF  
AASCBKwggSlAgEAAoIBAQCT7VJTUt9Us8cKj  
MzEfYyjiWA4R4/M2bS1GB4t7NxP9
```



Debugger Libraries Introduction Ask

Crafted by auth0

JSON Web Tokens are an open, industry standard [RFC 7519](#) method for representing claims securely between two parties.

JWT.IO allows you to decode, verify and generate JWT.

[LEARN MORE ABOUT JWT](#)

[SEE JWT LIBRARIES](#)

## Debugger

Warning: JWTs are credentials, which can grant access to resources. Be careful where you paste them! We do not record tokens, all validation and debugging is done on the client side.

Algorithm HS256

Encoded PASTE A TOKEN HERE

```
eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJdWUiOiIxMjM0NTY3ODkwIiwibmFtZSI6IkpvG4gRG9lIiwiwWF0IjoxNTE2MjM5MDIyfQ.SflKxwRJSMeKKF2QT4fwpMeJf36P0k6yJV_adQssw5c
```

Signed token.

Decoded EDIT THE PAYLOAD AND SECRET

HEADER: ALGORITHM & TOKEN TYPE

```
{  
  "alg": "HS256",  
  "typ": "JWT"  
}
```

PAYOUT: DATA

```
{  
  "sub": "1234567890",  
  "name": "John Doe",  
  "iat": 1516239022  
}
```

VERIFY SIGNATURE

```
HMACSHA256(  
  base64UrlEncode(header) + "." +  
  base64UrlEncode(payload)  
  your-256-bit-secret  
) secret base64 encoded
```

HS256 Algorithm

Secret used in signing (encoding) the token.



Debugger Libraries Introduction Ask

Crafted by auth0

## Debugger

Warning: JWTs are credentials, which can grant access to resources. Be careful where you paste them! We do not record tokens, all validation and debugging is done on the client side.

Algorithm

Encoded PASTE A TOKEN HERE

```
eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJzdWIiOiIxMjM0NTY3ODkwIiwibmFtZSI6IkpvG4gRG9lIiwiWF0IjoxNTE2MjM5MDIyfQ.C0L7anEGQpvzPtxkR0yRt17R1r0LatTPAnEwP0UpFvQ
```

Decoded EDIT THE PAYLOAD AND SECRET

HEADER: ALGORITHM & TOKEN TYPE

```
{  
  "alg": "HS256",  
  "typ": "JWT"  
}
```

PAYOUT: DATA

```
{  
  "sub": "1234567898",  
  "name": "John Doe",  
  "iat": 1516239822  
}
```

VERIFY SIGNATURE

```
HMACSHA256(  
  base64UrlEncode(header) + "." +  
  base64UrlEncode(payload),  
  mysecretkey  
) secret base64 encoded
```

Signature Verified

SHARE JWT

jupyter Intro\_to CRUD\_REST\_API\_with\_Auth Last Checkpoint: 15/02/2022 (autosaved) Logout

In [ ]:

```
1 import os
2 import secrets
3 import urllib.request
4 import requests
5 from flask import Flask, render_template, request, jsonify, make_response, url_for
6 from flask_sqlalchemy import SQLAlchemy
7 from flask_bcrypt import Bcrypt
8 from werkzeug.utils import secure_filename
9 from itsdangerous import URLSafeTimedSerializer, SignatureExpired
10 from flask_cors import CORS
11 import jwt
12 from PIL import Image
13 import datetime
14 from functools import wraps
15
16 app = Flask(__name__)
17
18 app.config['SECRET_KEY'] = 'thisissecret' Secret used for signing.
19 app.config['SQLALCHEMY_DATABASE_URI'] = app.config['SQLALCHEMY_DATABASE_URI'] = 'sqlite:///todo.db'
20
21 UPLOAD_FOLDER = 'static/profile_pics'
22 app.config['UPLOAD_FOLDER'] = UPLOAD_FOLDER
23 app.config['MAX_CONTENT_LENGTH'] = 16 * 1024 * 1024
24 ALLOWED_EXTENSIONS = set(['txt', 'pdf', 'png', 'jpg', 'jpeg', 'gif'])
25
26 bcrypt = Bcrypt(app)
27 db = SQLAlchemy(app)
28 s = URLSafeTimedSerializer('Thisisasecret!')
29 CORS(app)
30 cors = CORS(app, resources={r"/api/*": {"origins": "*"}})
31
32 class User(db.Model):
33     id = db.Column(db.Integer, primary_key=True)
34     username = db.Column(db.String(50))
35     email = db.Column(db.String(50))
36     password = db.Column(db.String(80))
37     admin = db.Column(db.Boolean)
38     bio = db.Column(db.Text)
39     image_file = db.Column(db.String(255), nullable=False, default='default.jpg')
40     activated = db.Column(db.Boolean)
41
42
43 class Todo(db.Model):
```

```
395 @app.route('/api/login')
396 def login():
397     auth = request.authorization
398
399     if not auth or not auth.username or not auth.password:
400         return make_response('Could not verify', 401, {'WWW-Authenticate' : 'Basic realm="Login required!"'})
401
402     user = User.query.filter_by(username=auth.username).first()
403
404     if not user:
405         return make_response('Could not verify', 401, {'WWW-Authenticate' : 'Basic realm="Login required!"'})
406
407     if bcrypt.check_password_hash(user.password, auth.password) and user.activated:
408         token = jwt.encode({'id': user.id, 'exp': datetime.datetime.utcnow() + datetime.timedelta(minutes=30)}, app.config['SECRET_KEY'])
409
410         # return jsonify({'token': token.decode('UTF-8')}) for PythonAnywhere version
411         return jsonify({'token': token}) Token
412
413
414     return make_response('Could not verify', 401, {'WWW-Authenticate' : 'Basic realm="Login required!"'})
415
```

## Signing with jwt.encode

▶ http://localhost:9018/user/login Examples (0) ▾

GET  Params Send Save

Authorization Headers (1) Body Pre-request Script Tests Code

Key	Value	Description
<input checked="" type="checkbox"/> Authorization	Basic am9objpwYXNzd29yZA==	
New key	Value	Description

Body Cookies Headers (5) Test Results Status: 200 OK Time: 269 ms

Pretty Raw Preview JSON  Save Response

```
1 {  
2   "token": "eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJpZCI6MSwiZXhwIjoxNjQ4MzYzODU2fQ  
3     .Bqa7ndMrXkEvsqyXLKrZlRnoTnUQu0II0VPTnouF55s"  
}
```

JWT signed token

**Private/Public key used on a  
blockchain via a crypto-wallet.**

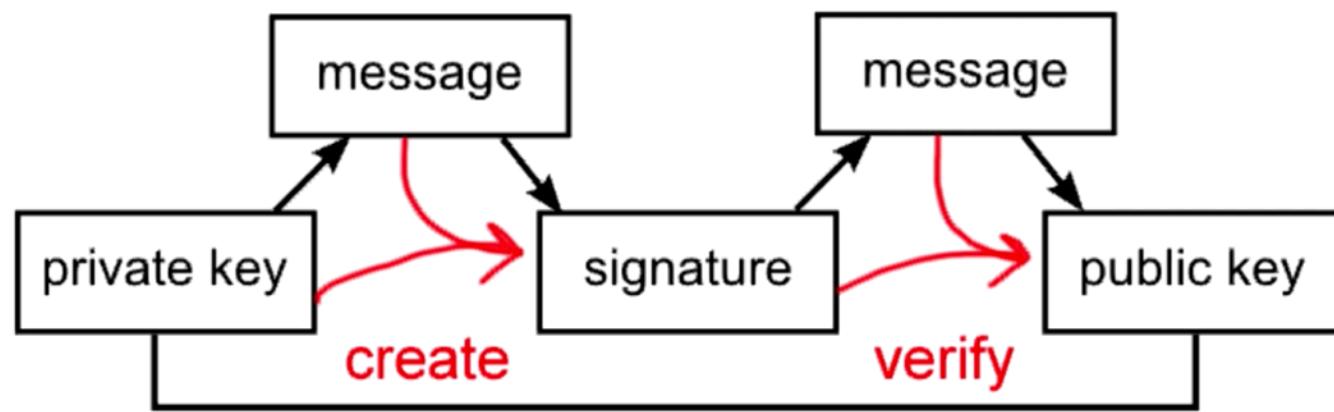


**BLOCKCHAIN & CRYPTO 101**

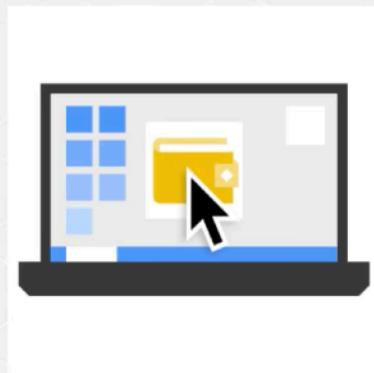
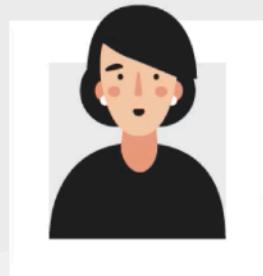
# **WHAT ARE CRYPTO WALLETS**



Source: <https://www.youtube.com/watch?v=d8IBpfs9bf4>



Source: CuriousInventor (YouTube)



Desktop  
wallet



**Create your first crypto-wallet.**



METAMASK

Features ▾

Support ▾

About ▾

Build ▾

Download



# A crypto wallet & gateway to blockchain apps

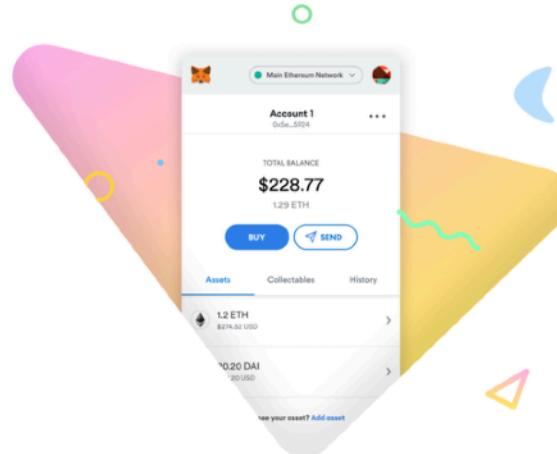
Start exploring blockchain applications in seconds. Trusted by over 21 million users worldwide.

Download now

LEARN MORE

## Buy, store, send and swap tokens

Available as a browser extension and as a mobile app, MetaMask equips you with a key vault, secure login, token wallet, and token exchange.



Source: <https://metamask.io/>



chrome web store



bsysin@gmail.com ▾

[Home](#) > [Extensions](#) > [MetaMask](#)



## MetaMask

Offered by: <https://metamask.io>

★★★★★ 2,540 | [Productivity](#) | 10,000,000+ users

[Add to Chrome](#)

[Overview](#)

[Privacy practices](#)

[Reviews](#)

[Support](#)

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# METAMASK TUTORIAL

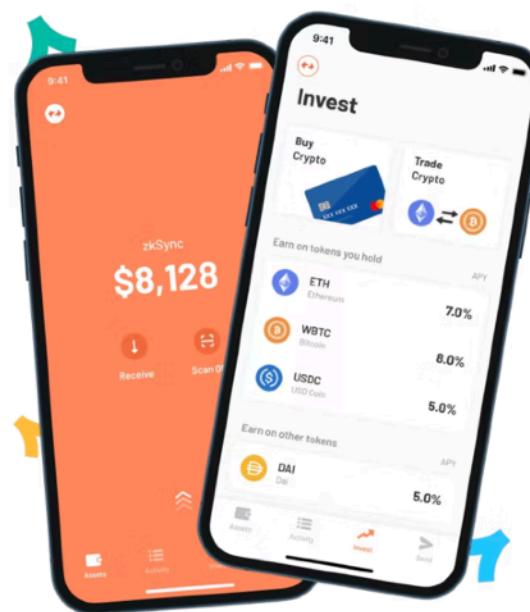


<https://www.youtube.com/watch?v=tw-tQD0jztE>

# **Introduction to Argent**

## The best of Ethereum. A fraction of the cost.

Buy, earn, stake and trade on Ethereum Layer 2 with low fees & bulletproof security.



We use 🍪 cookies to personalise your experience on Argent. [Privacy Policy](#)

<https://www.argent.xyz/>

# Meet the Dapp: Argent X



<https://www.youtube.com/watch?v=knFgomeax8Y>

# **Introduction to Keplr**



Extension Mobile App Dashboard Security Chains Integration

Install Keplr

# Your Interchain Gateway

Introducing Keplr, the leading IBC-enabled wallet that puts usability and interoperability at its core.

Install Keplr →



700 000+ Users



## The Seamless Interchain Experience

<https://www.keplr.app/>



# HOW TO SETUP YOUR Keplr WALLET

<https://www.youtube.com/watch?v=4uqbjGpivC8>

**Now you have a crypto-wallet  
what can you do with it?**

- 1. FinTech - DeFi (Decentralised Finance)**
- 2. NFTs (Digital Art Collection and Trading)**
- 3. Gaming (Token based gaming)**
- 4. Decentralised business applications beyond finance such as logistics, healthcare, publishing, agriculture, manufacturing, which utilise blockchain technology.**
- 5. Metaverse (AR/VR/XR integrated into a virtual world built on top of a blockchain network in which digital properties such as NFTs can be owned and exchanged under your Avatar identity).**

**Connecting your wallet to  
Like coin.**



LikeCoin

The Keplr logo icon consists of a large, bold, black letter 'K' enclosed within a square. The square has a gradient fill, transitioning from blue at the top to purple at the bottom.

Keplr



Your Address  
like...z39s



Portfolio >

Validators >

Proposals >

Transactions >

• likecoin-mainnet-2  
8,302,693

## Your Balances

Claim Rewards

Total ▾	Staked ▾	Unstaking ▾	Rewards ▾	Available ▾	
0 LIKE 0	0 LIKE 0	0 LIKE 0	0	0 LIKE 0	Send

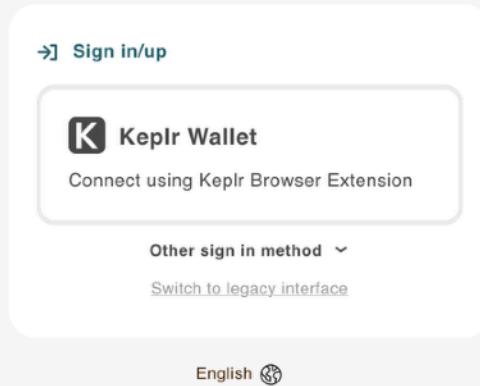
## Your Stake

No validators in your portfolio.

Head over to the [validator list](#) to start staking.

<https://stake.like.co/>

# Liker Land



<https://like.co/in/register>

**Join Likerland.**



設定

電郵



追蹤名單



◎ 介面語言



Liker ID

[關於 Liker Land](#)[Writing NFT](#)[發行 NFT](#)[讚賞公民](#)[關於 LikeCoin](#)[幫助](#)[參考文檔](#)[常見問題](#)<https://app.like.co/nft><https://liker.land/zh-Hant/settings/>

**Publish on Matters and  
WordPress.**

## Matters

Discover

Follow

Create

### Discover

Entries

You won't see announcements for 7 days

新性感雜誌

#### 主題創作 | 從這裡搭到\_\_\_\_要多少錢？

新性感雜誌

我掏出鈔票，不過是搭趟車，卻像來當地買春還射後不理的有婦之夫，讓人一語道破，灰頭土臉。

⌚ 0.6 hours · 🎵 2 · Today 9:05



#### 你不知道的，那些身高太高的困擾！

Sunline

每次我與姊姊聽到誰說：「希望我女兒也長得像你一樣高」的時候，我們一定會異口同聲的說：「拜託，不要。」平均水準的那個「高」就好，在我倆都超過177cm的生命經驗裡，真的不需要太高，168cm就...

⌚ 2 hours · 🎵 1 · Today 12:21



#### 【DAO 101 #11】累進稅率 (Progressive Tax) 對 DAO 中的明星項目課稅

Ricky Wang ❤️

DAO 的困難之處在於，經營者往往也需要對 DAO 進行 注意力管理，所以 DAO 的經營者要想很多方法讓成員關注 DAO 中熱烈發展的專案項目與活動，所以往往副作用也是明星項目的出現。時間一久，就會...

⌚ 0.6 hours · 🎵 1 · Today 10:29



#### 【活動筆記與心得】NFT的前世今生...與未來

育軒



Search articles, tags and authors

### Topics

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#### #星心星意

個人網誌、手作、桌遊推廣。



#### #Urbex天地

- hauntingly beautiful and beautifully haunting things, from all urban exploration lovers. 間市区一座座默默...



#### #真科幻

概念上，有點像科幻，但比科幻要求更多的科學常識… 又有點像神祕學，但也要求更多的科學背景… 就把它...



#### #海外看咩哩哩哩

GoinCN加速器是一款集海外翻墙回国看视频加速，音乐加速，app加速，网站加速，免费加速，解锁影音版...



#### #詩

希望成為詩詞聚集地。



### Authors

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Daisy

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我是 Matters、\$HUAHUA、...

Howdy, admin

Add Plugins [Upload Plugin](#)

A new WordPress version is available! Please update from [your Pantheon dashboard](#).  
For details on applying updates, see the [Applying Upstream Updates](#) documentation.  
If you need help, open a support chat on Pantheon.

Search Results    Featured    Popular    Recommended    Favorites    Keyword: LikeCoin    1 item

**Web3Press – Decentralize Publishing with Writing NFT by LikeCoin** Active [More Details](#)

Web3Press – Publish your posts as NFT and sell it right away; build your community in the Web3 way.

By [LikeCoin](#)

**★★★★★ (10)** 1,000+ Active Installations Last Updated: 3 days ago ✓ Compatible with your version of WordPress 1 item

Thank you for creating with [WordPress](#). [Get Version 5.9.2](#)

mgnt3070 2 0 + New

Dashboard Posts Media WP Swings Pages Weather Comments User Frontend WooCommerce Products Analytics Marketing Appearance Plugins Active Installed Plugins Add New Plugin Editor Users Tools Settings WP File Manager Forminator FakerPress Collapse menu



## Web3Press – Decentralize Publishing with Writing NFT by LikeCoin

Description Installation FAQ Changelog Screenshots Reviews

The best product for your fans, is your IDEA. Web3Press publishes your posts to the blockchain, enabling you to write as usual but publish differently.

Web3Press provides a creative business model, especially for open content. No payroll or advertisement anymore. Your readers buy your posts because they love your words. Readers' collections add a touch of class to their web3 portfolio. If you are looking for ways to monetize, build communities with your readers and preserve your content, this plugin is for you.

Web3Press is based on LikeCoin, an application-specific blockchain that the community and infrastructure focus on the creator's economy.

### Why Web3

The Internet has been evolving in the past decades and becoming increasingly decentralized. In Web1, information was 1-way-broadcast; in Web2, information was user-generated. In Web3, the concept of ownership is applied to every piece of data. Echoing "Democratise Publishing", the vision of WordPress, Web3Press pushes one more step forward: the freedom to OWN. Oh yes, it's free, as in freedom.

### SELL YOUR POSTS

Let readers support you by buying your posts while reading. A mini NFT Widget is embedded into your WordPress posts to let readers collect their favorites.

### BE PROUD OF YOUR WORK

Share your [NFT portfolio](#) to show-off and sell your published articles.

### BUILD YOUR COMMUNITY

Connect your fans by sending NFT gifts with warm greetings. Publish your content to platforms like Matters.news automatically.

### PRESERVE YOUR CONTENT

Version: 3.0.4

Author: [LikeCoin](#)

Last Updated: 3 days ago

Requires WordPress Version: 5.3 or higher

Compatible up to: 6.1.1

Requires PHP Version: 5.4 or higher

Active Installations: 1,000+

[WordPress.org Plugin Page »](#)

[Plugin Homepage »](#)

### AVERAGE RATING

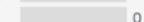
★★★★★  
(based on 10 ratings)

### REVIEWS

Read all reviews on WordPress.org or write your own!

5 stars  10

4 stars  0

3 stars  0

Latest Version Installed

- Dashboard
- Posts
- Media
- Pages
- Comments
- DotStore Plugins
- Products
- Events
- Web3Press**
- Plugin Setting
- Liker ID
- Getting Started
- WooCommerce
- Analytics
- Marketing
- Adv. Woo Search
- Appearance
- Plugins 1
- Users
- Tools
- Settings
- MC4WP
- myCred
- Points

WordPress 6.1.1 is available! [Please update now.](#)

# WEB3PRESS

[Website Liker ID](#) [Your Liker ID](#)

## Site Default Liker ID

This will be the site default Liker ID if any author has not set one.

sz2020

[Sign Up / Find my Liker ID](#)

Liker ID

Wallet



sz2020

like1aeo45ukcn7yr6jzrwq5526ng3xlf6gs0xtz39s

[Change](#)

[Disconnect](#)

[Confirm](#)

7+1 2 0 + New Autoptimize Delete Cache UpdraftPlus Howdy, BYS

Comments DotStore Plugins Products Events Web3Press WooCommerce Analytics Marketing Adv. Woo Search Appearance Plugins Users Tools Settings

General Writing Reading Discussion Media Permalinks Privacy WP Membership Points by Level Easy Query UpdraftPlus Backups User Role Editor Autoptimize

**Advanced**

**LikeCoin widget advanced settings**

**Post option**  Allow editors to customize display setting per post [Reset to default](#)

---

**Publish to Matters**

Matters is a decentralized, cryptocurrency driven content creation and discussion platform.

By publishing on Matters, your articles will be stored to the distributed InterPlanetary File System ([IPFS](#)) nodes and get rewarded. Take the first step to publish your creation and reclaim your ownership of data!

Show settings

---

**Publish to Internet Archive**

Internet Archive ([archive.org](#)) is a non-profit digital library offering free universal access to books, movies & music, as well as 624 billion archived web pages.

Show settings

---

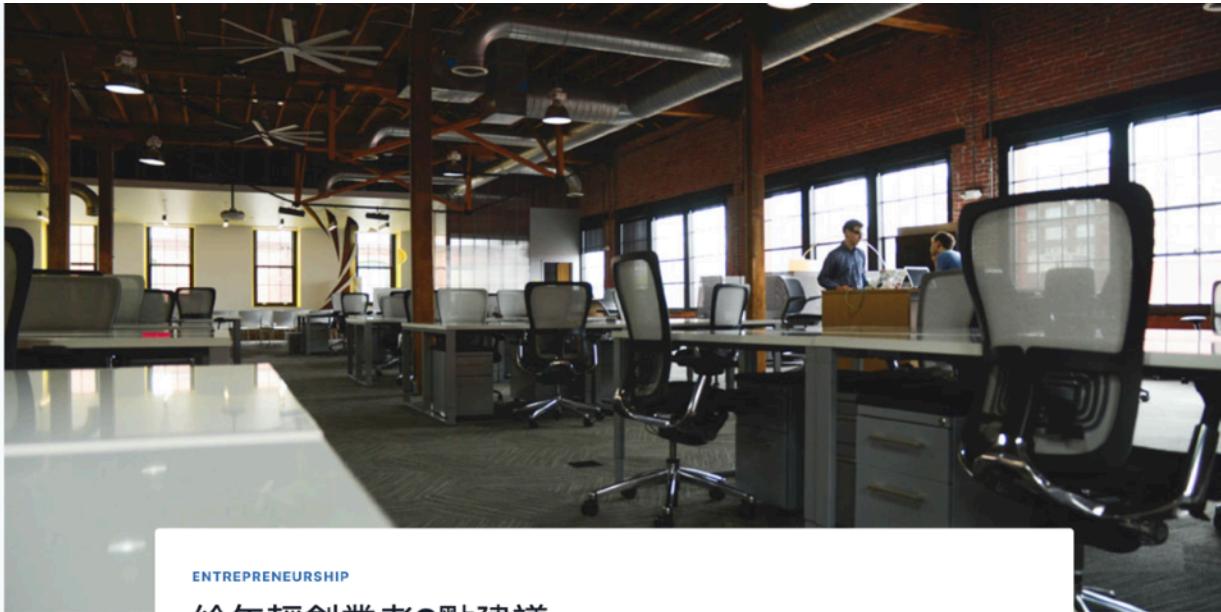
**Web Monetization**

Web Monetization is an API that allows websites to request small payments from users facilitated by the browser and the user's Web Monetization provider.

You would need to register a [payment pointer](#) to enable web monetization. However LikeCoin is working hard to integrate web monetization natively into our ecosystem. Follow our latest progress [here!](#)

Web Monetization  Enable

**Confirm**



ENTREPRENEURSHIP

## 給年輕創業者3點建議

By BYS • March 8, 2019

我奉勸有志創業的朋友，當你選上這條路，就要有心理準備，旁邊一定會有人帶著懷疑眼光，以為你走投無路，不是因為工作表現差而給公司開除，就一定是人緣薄，在公司處處碰壁，給人排斥。還有一批人會認為你自視太高，又或者「家中有米」，不愁沒後路。如果你是學生，就會有人覺得你在人生中未經歷過多少風浪，看得電影多，以為自己是Steve Jobs或Mark Zuckerberg之流，未打過工就已經想創業，其實在發白日夢！

這些閒言閒語有沒有事實根據，一點也不重要。因為當你介意的時候，你已經輸掉。

## Matters

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通知

我的

創作



sz2020

# Steve Jobs #創業

### 給年輕創業者3點建議

今天 15:18 分佈式入口

這是一篇我結合兩篇舊文章而寫成的作品，也是我在Matters的第一篇文章。以文創業並以此作為我參於DePub的起點。

我奉勸有志創業的朋友，當你選上這條路，就要有心理準備，旁邊一定會有人帶著懷疑眼光，以為你走投無路，不是因為工作表現差而給公司開除，就一定是人緣薄，在公司處處碰壁，給人排斥。還有一批人會認為你自視太高，又或者「家中有米」，不愁沒後路。如果你是學生，就會有人覺得你在人生中未經歷過多少風浪，看得電影多，以為自己是Steve Job或Mark Zuckerberg之流，未打過工就已經想創業，其實在發白日夢！

這些閒言閒語有沒有事實根據，一點也不重要。因為當你介意的時候，你已經輸掉。

第一：創業是心理素質比賽，比較性格甚於一切。你會考9A，環球工商管理畢業，創業比賽奪標，你也不一定會創業，因為關鍵是內在心理條件。看過許多創業比賽得獎者，比賽完結以後，回歸校園或職場，尤以機會成本最高的商科金融人最常見。對他們來說，這種比賽只不過是一場遊戲，自有其規則。參賽者只要懂得怎樣玩，勝算便高。而且許多人都抱着增廣見聞的心態來參加，贏了更可使簡歷錦上添花。

不怕失敗、獨立自主

那麼是什麼類型的性格會創業？簡單直接一點來說就是那種不怕失敗、較自主獨立的性格，也就是命運在我手，由自己決定的哪種。絕對不是被「怪獸家長」和「操卷式學校」調教得貼貼服服的那一種。他們不會因為一些挫折，便會輕易放棄。此外，創業型性格必須是行動



5



發布評論...



Q 搜索

### 推薦閱讀

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純粹寫



寂光苑 雪中禪影 Zen in the Camera viewfinder , the...

Kyle Chu 微風捕手



Jobs不會再活過來的，放過他吧

傅瑞德 | Fred Jame



<史帝夫賈伯斯 Steve Jobs> 觀影心得分享

半調子人生



22-台上一分鐘，台下10年功

cshowme



繁體中文

關於我們 玩轉 Matters 實用指南

社區共建基地 一鍵搬家 用戶協議

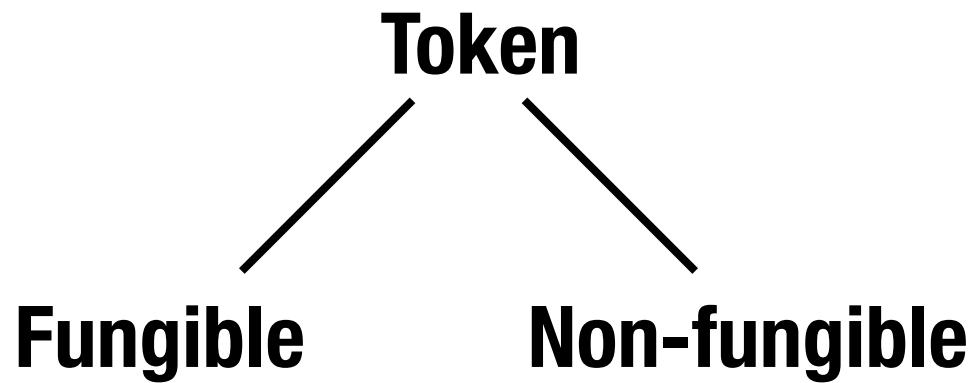
開放社區 漏洞賞金計畫 下載應用

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**Steps for learning Blockchain  
with minimum risk.**

1. Download and setup a crypto-wallet (e.g. Keplr)
2. Connect your wallet to the LikeCoin chain ([stake.like.co](https://stake.like.co)) and sign up a Liker account (<https://like.co/in/register>) at Lake Land.
3. For earning LikeCoin on your self-hosted WordPress website, install and activate the Web3Press plugin.
4. Create a Matters (like Medium) account for earning LikeCoin through your written articles and publish your WordPress post to Matters to have an additional channel for distributing your LikeCoin enabled posts through the Matters website besides your own WordPress site.

# **NFT: Tokenization of Rights**



*Paramount+*  
**60+**  
MINUTES



Source: <https://www.youtube.com/watch?v=ANO29CzQXUA>

**From Web 2.0 to Web 3.0: Imagining the future.**

# Platform Network vs. Token Network

	Platform Network	Token Network
<b>Web Paradigm</b>	Web 2.0 (Centralised)	Web 3.0 (Decentralised)
<b>Network Architecture</b>	Client-Server	Peer-to-Peer
<b>Openness/Transparency/ Mutability</b>	Closed/Non-transparent/ Mutable	Open/Transparent/Immutable
<b>Transaction Exchange Mechanism</b>	Gov't Backed Legal/ Financial/Trading System	Concensus Based Supported by Miners and Validators
<b>Membership</b>	Member as User and/or Customer and Producer	Member as User, Producer, Customer and/or Investor and Voter
<b>Unit of Value Exchange in the Economy</b>	Country Currency	Token
<b>Fund Raising and Capital Formation</b>	IPO	ICO (Forbidden by many governments) and Minting/Staking
<b>Organisation Entity</b>	Corporations/NGOs/Gov't	Decentralized Autonomous Organizations (DAOs)
<b>Legal Binding (Law)</b>	Business Contract	Smart Contract
<b>Application Development</b>	Web and Mobile App	Dapp (Decentralised App)
<b>Wallet</b>	E-Payment Wallet	Crypto Wallet

**Has Blockchain solved the “trust”  
problem?**

# How \$60 Billion in Terra Coins Went Up in Algorithmic Smoke

By [Muyao Shen](#)

21 May 2022



If you put \$1 under your mattress, you know you'll get \$1 back when you go looking for it. When you deposit \$1 with a bank, you can be pretty sure you'll get it back even if they do more with it than lock it in a vault, thanks to regulations developed over centuries. A branch of cryptocurrencies called stablecoins has been trying to replicate that kind of dependability in totally new ways. Some have used the equivalent of a digital vault to back up their promises. Others have tried solutions that are far more complex. The biggest of those, TerraUSD, also known as UST, and its sister token Luna have melted down in spectacular fashion, sending their prices to near zero and their market values plunging to a shadow of the combined \$60 billion they once commanded. Its plunge has raised concerns that go beyond its

ow slice of the stablecoin world.

Waiting for wa.onelink.me...

Source:<https://www.bloomberg.com/graphics/2022-crypto-luna-terra-stablecoin-explainer/?leadSource=uverify%20wall>

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Cryptocurrencies

• This article is more than 1 month old

## World's largest crypto exchange hacked with possible losses of \$500m

Binance, the latest crypto company to experience a targeted hack, temporarily suspends transactions and the transfer of funds



Guardian staff and agencies

Fri 7 Oct 2022 17.06 BST



Source: <https://www.theguardian.com/technology/2022/oct/07/binance-crypto-hack-suspended-operations>

## RISK TAKERS

# Crypto crisis continues. Here's the latest on the FTX collapse

By Diksha Madhok, CNN Business

Updated 11:56 AM EST, Mon November 14, 2022



Source: <https://edition.cnn.com/2022/11/14/business/ftx-crypto-collapse-updates-hnk-intl/index.html>



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### MORE FROM CNN BUSINESS



Japan's economy shrinks for the first time in a year

Source: <https://edition.cnn.com/2022/11/14/business/ftx-crypto-collapse-updates-hnk-intl/index.html>

Markets  
Crypto

## NFT Trading Volumes Collapse 97% From January Peak



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**Bloomberg Television**

The fading NFT mania is part of a wider \$2 trillion wipeout in the crypto sector. *Photographer:* Gabby Jones/Bloomberg

By Sidhartha Shukla

28 September 2022 at 16:49 GMT+8

<https://www.bloomberg.com/news/articles/2022-09-28/nft-volumes-tumble-97-from-2022-highs-as-frenzy-fades-chart>



SECURITIES AND  
FUTURES COMMISSION  
證券及期貨事務監察委員會

Speech

## **Embracing Innovation, Regulation and the Future of Finance Keynote address at Hong Kong FinTech Week 2022**

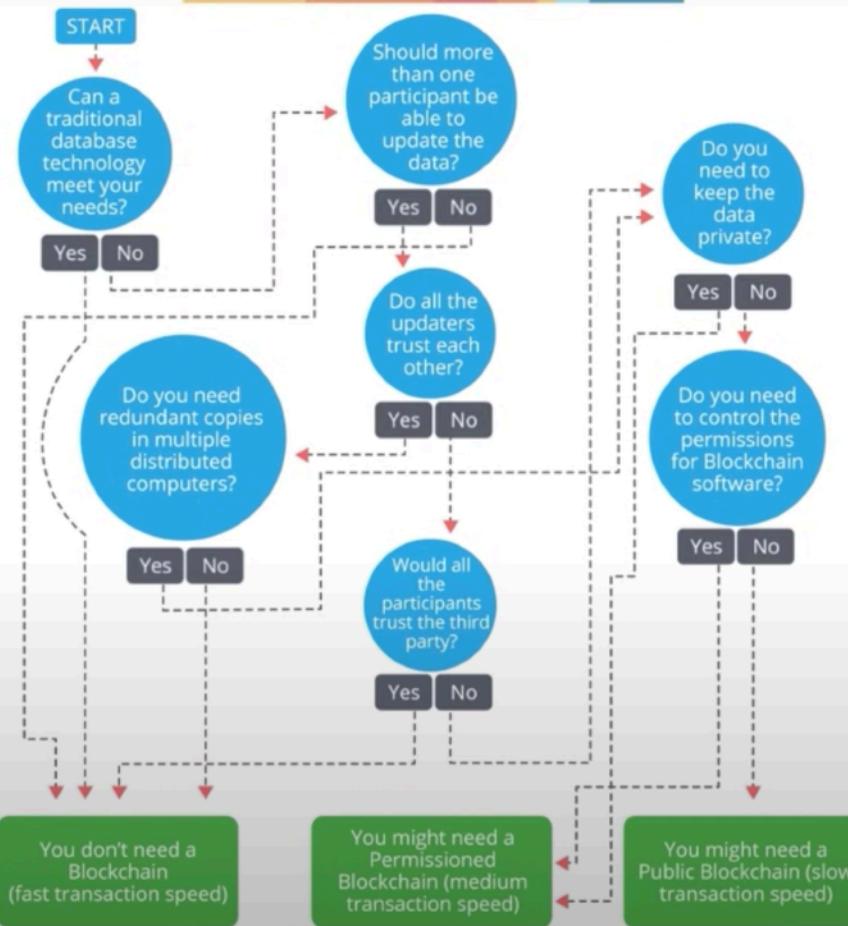
**Ms Julia Leung  
Deputy Chief Executive Officer and  
Executive Director, Intermediaries**

**31 October 2022**

[https://www.sfc.hk/-/media/EN/files/COM/Speech/HKFW-Speech---Eng\\_20221031.pdf?  
rev=34b90c7d8dce42ad9215da652cd77dc5&hash=E11F1164D81137053A27C6CEEFACE9D3](https://www.sfc.hk/-/media/EN/files/COM/Speech/HKFW-Speech---Eng_20221031.pdf?rev=34b90c7d8dce42ad9215da652cd77dc5&hash=E11F1164D81137053A27C6CEEFACE9D3)

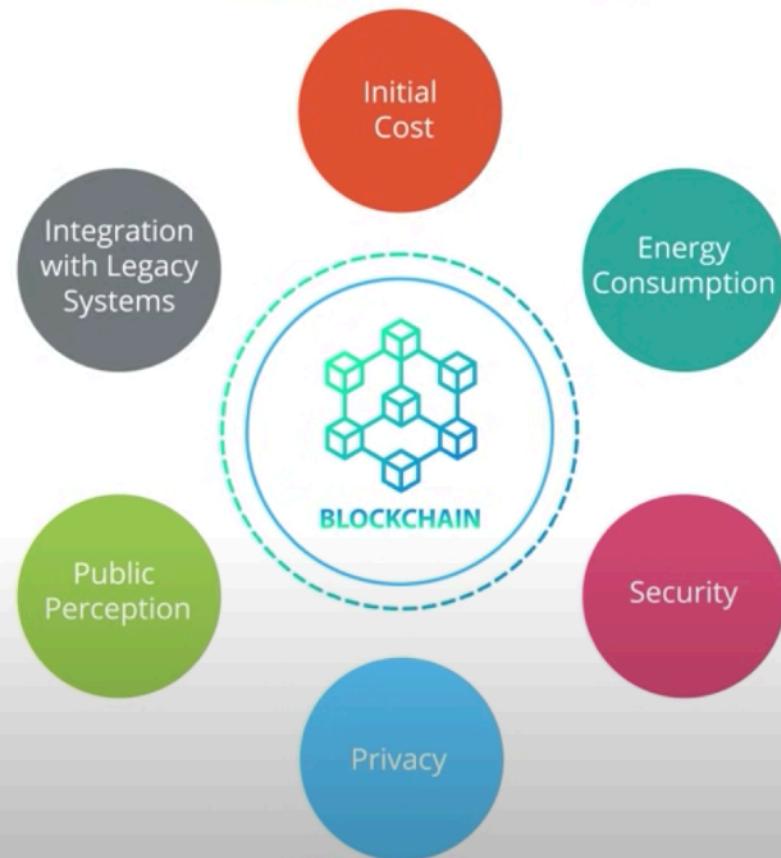
**Blockchain: Going forward.**

## Do We Need Blockchain?



Source: [Simplilearn](#)

## Challenges in Blockchain



Source: [Simplilearn](#)

**Thank you for your time!**