

## **Web 3.0**

### **Lecture Notes 11/10/2021**

#### **Web 1.0**

Static HTML pages, static desktop web pages designs for information consumption and served from expensive

#### **Web 2.0**

-- move from static to interactive pages.

-- 3 defining concepts that define Web 2.0:

##### **1. Mobile**

- a. Think iphone/smartphones.
- b. Instead of being at a fixed desktop, you can bring the network with you. Transformed the network from a static "thing" to a connected thing

##### **2. Social**

- a. Until Friendster, MySpace and then Facebook in 2004, the internet was a largely dark and anonymous place -> made it social.

##### **3. Cloud**

- a. Think of it as someone had a bunch of resources and said "hey we have a bunch of resources, come store your things with us"

Think of cloud like an apartment building where everyone rents a spot

1. Rent seeking. Does the cloud really create value or are they just hosting value?
2. What do you do if they want to charge you more?
3. Once your company is in the cloud how easy is it for you to move it?
  - a. This is why Google and Amazon own their own cloud services, to prevent other companies from raising prices. They want to control their own data.

Web 2.0 Information is money

stockpiling of data in centralized servers, with Amazon, Facebook and Twitter, the biggest custodians. People sacrificed security for the convenience of these services

**We have accepted that this is the structure the internet should be. Professor Graham encourages us to think this is not how it has to be.**

#### **Web 3.0**

Web 3.0 based on three principles:

##### **1. Open**

- a. Open in that they are built from open source software built by an open and accessible community of developers and executed in full view of the world.
- b. People must be able to examine the software they see.
  - i. Lots of applications are built to be digital heroin (not good for us!).

##### **2. Trustless**

- a. in that the network itself allows participants to interact publicly or privately without a trusted third party. We want trust to be distributed.

### 3. Permissionless

- a. Permissionless in that anyone, both users and suppliers can participate without authorisation.

### What Technologies Drive Web 3.0?

1. **Edge computing:** Move computing away from central data centers back to personal devices
2. **Decentralised data networks:** You own your own data. You can sell data without losing ownership
3. **Artificial intelligence:** machine learning algorithms have become powerful enough to create useful predictions and actions

### Web 3.0 Concepts

- The way you escape competition is to chase authenticity:
  - If you become good in your niche, people will look for you.
- With web 3.0 you will be able to trade value information and work with global counterparties they don't know or yet explicitly
- trust without an intermediary.
  - You need to become the aggregator, collect customers, and do matches.
    - Think Google. Google doesn't take care of all the webpages, it just directs customers to matches.

### Web 3.0 is more secure

- Distributed networks help fight against censorship breaches
- Dramatic reduction in hacks and data breaches because data will be decentralized
  - Why not just trust the big companies who have greater security measures in place? (still a single point of failure. Although Google might not fail as much, as soon as it does, everything fails.)

### The IPFS (The Interplanetary File System)

The average lifespan of a webpage is 100 days

Maybe we should collect web pages as a form of archeology. The IPFS is a way of doing that. <https://www.youtube.com/watch?v=5Uj6uR3fp-U>

### Can you have order in a Web 3.0 world?

- Does a decentralized internet mean chaos? Professor Graham is unsure but he thinks it will be better.
- Something to think about: SSD Storage, it doesn't last forever (on average 10 years) What happens when Facebook doesn't want to store your data anymore?

Web 3.0 is a far more transparent version of the internet. Decentralization was the idea, blockchain was the means.

### Ideas Brain Storming

Capsule → storage device in your house that lets you upload the data you want to sell.  
Associated marketplace that use web torrents. Get you paid to store.

Student Ideas:

**Student:** This sounds like a pyramid scheme. The more storage that is bought, the less valuable it will become

**Student:** How do you determine the value of your data? Is it a flat rate?

Professor Graham's personal opinion is to treat it like net neutrality, "all bits are equal."