The Spritely Foundation:*

Empowering Networked Communities

By Randy Farmer & Chris Lemmer Webber

* or "Communitas" or whatever

- **Introducing the Problem**

- Who are we?
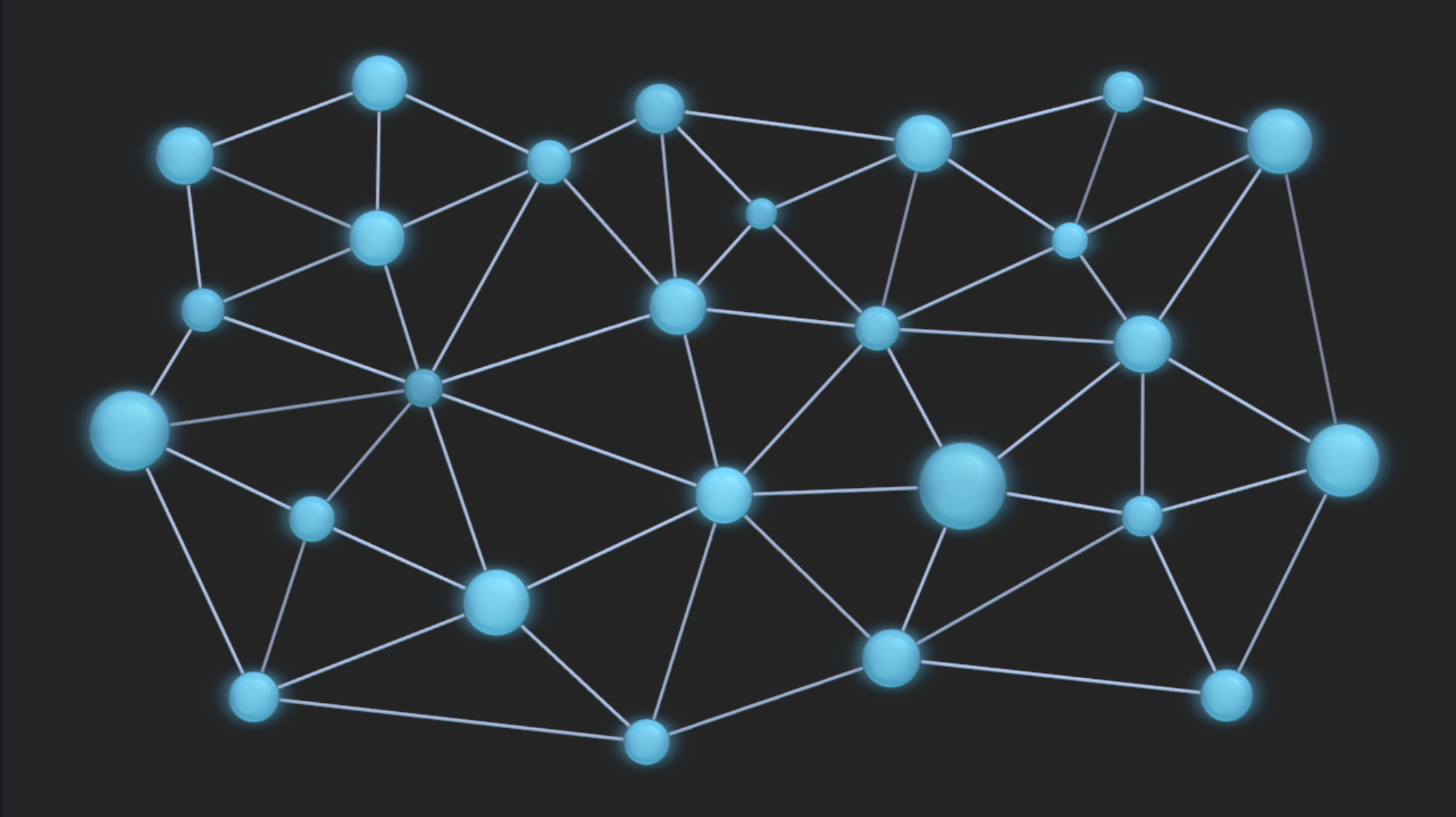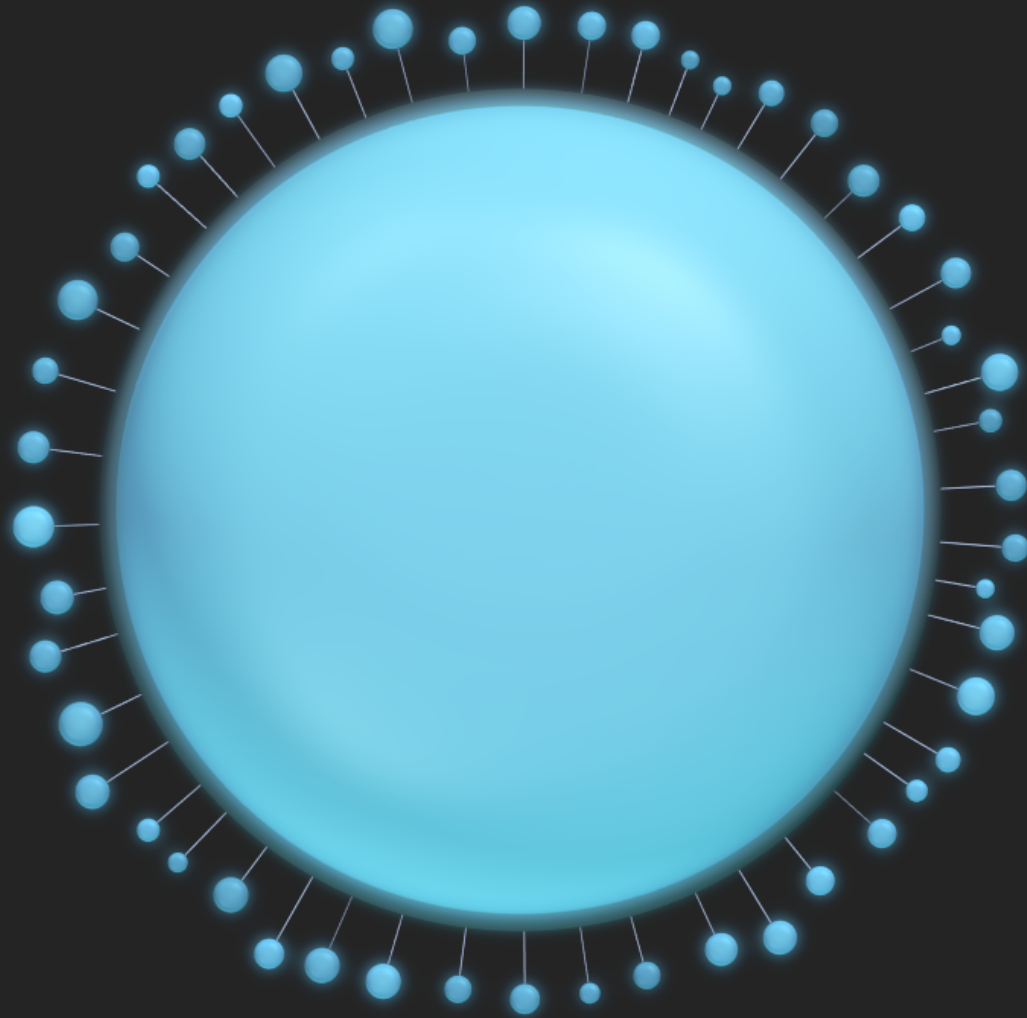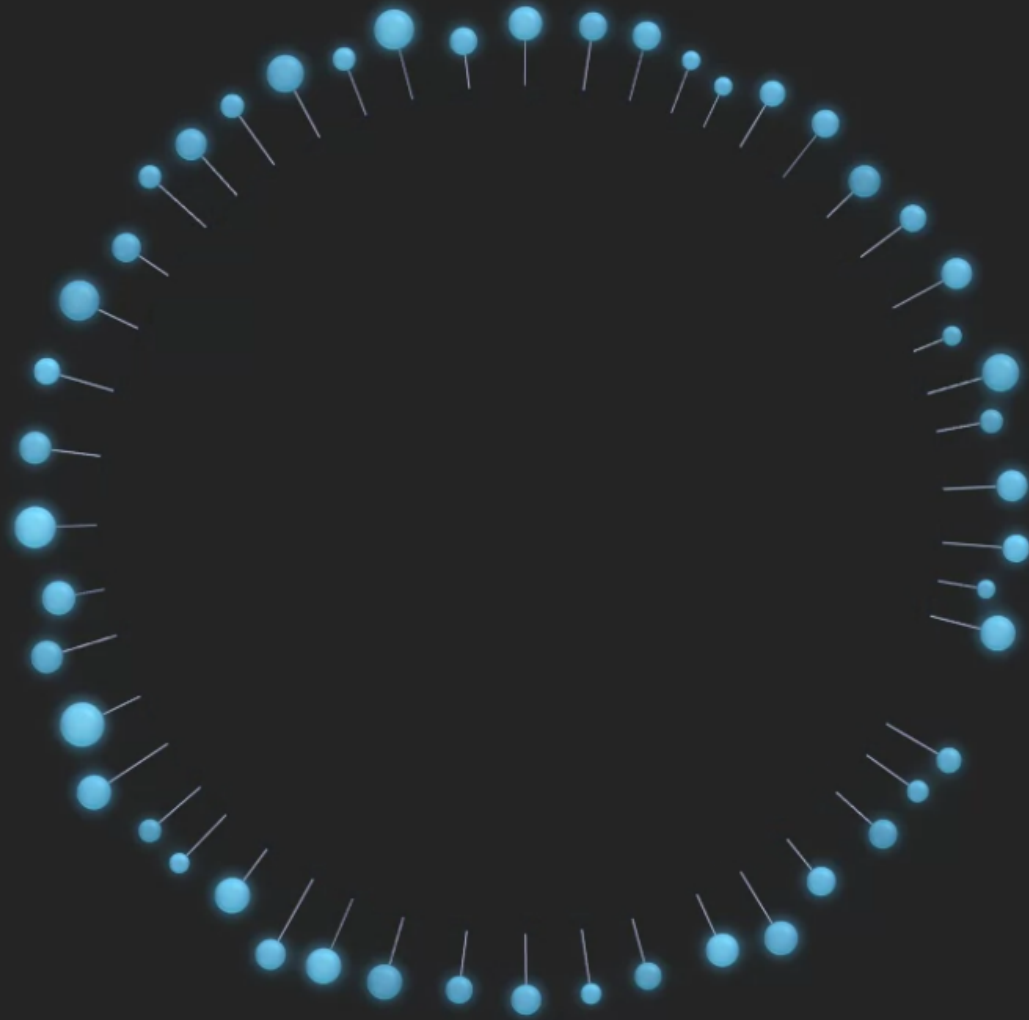
- User stories

- How to build it

- Extra! Extra!

Centralized Social Networks

are broken
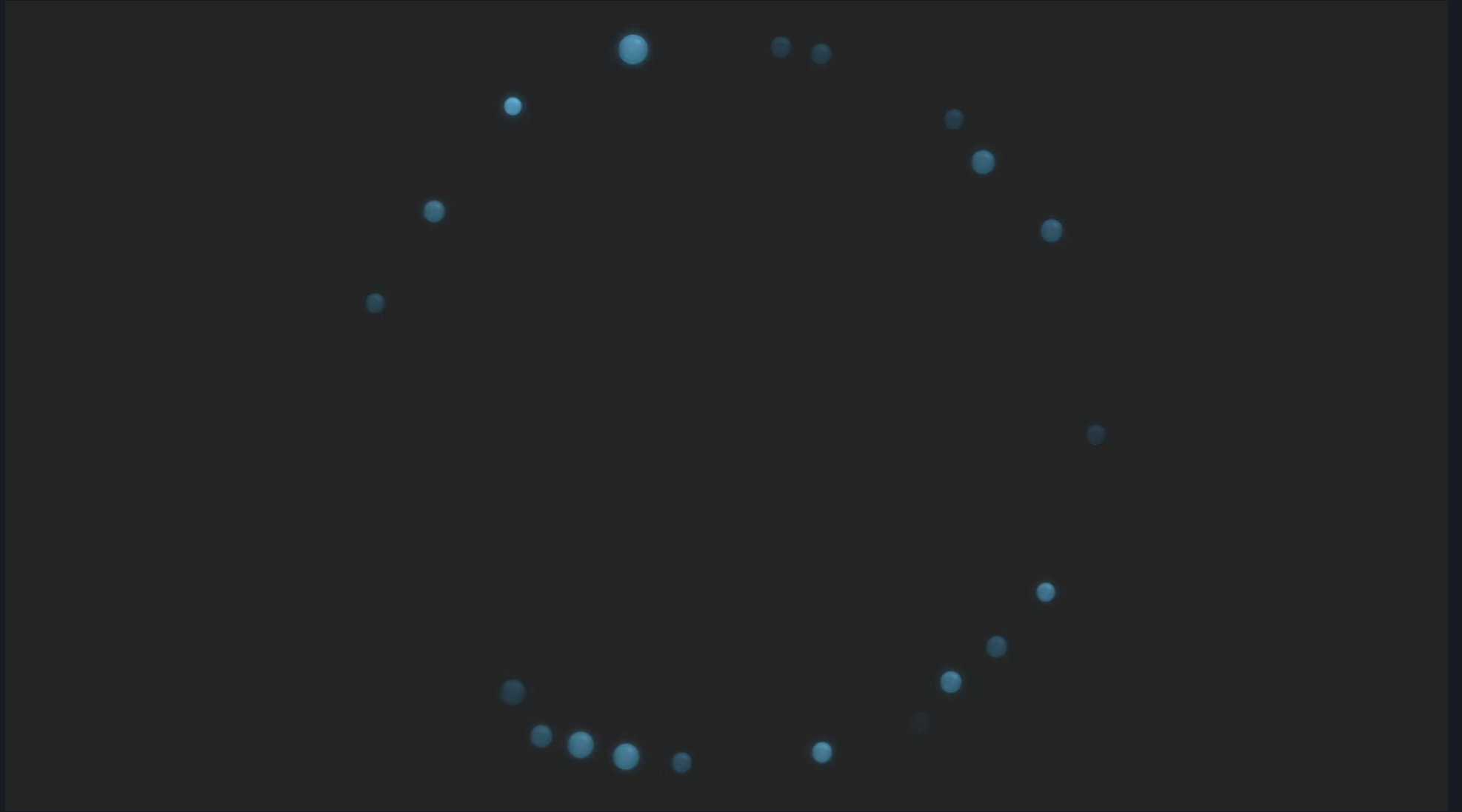
Surveillance Capitalism

is broken
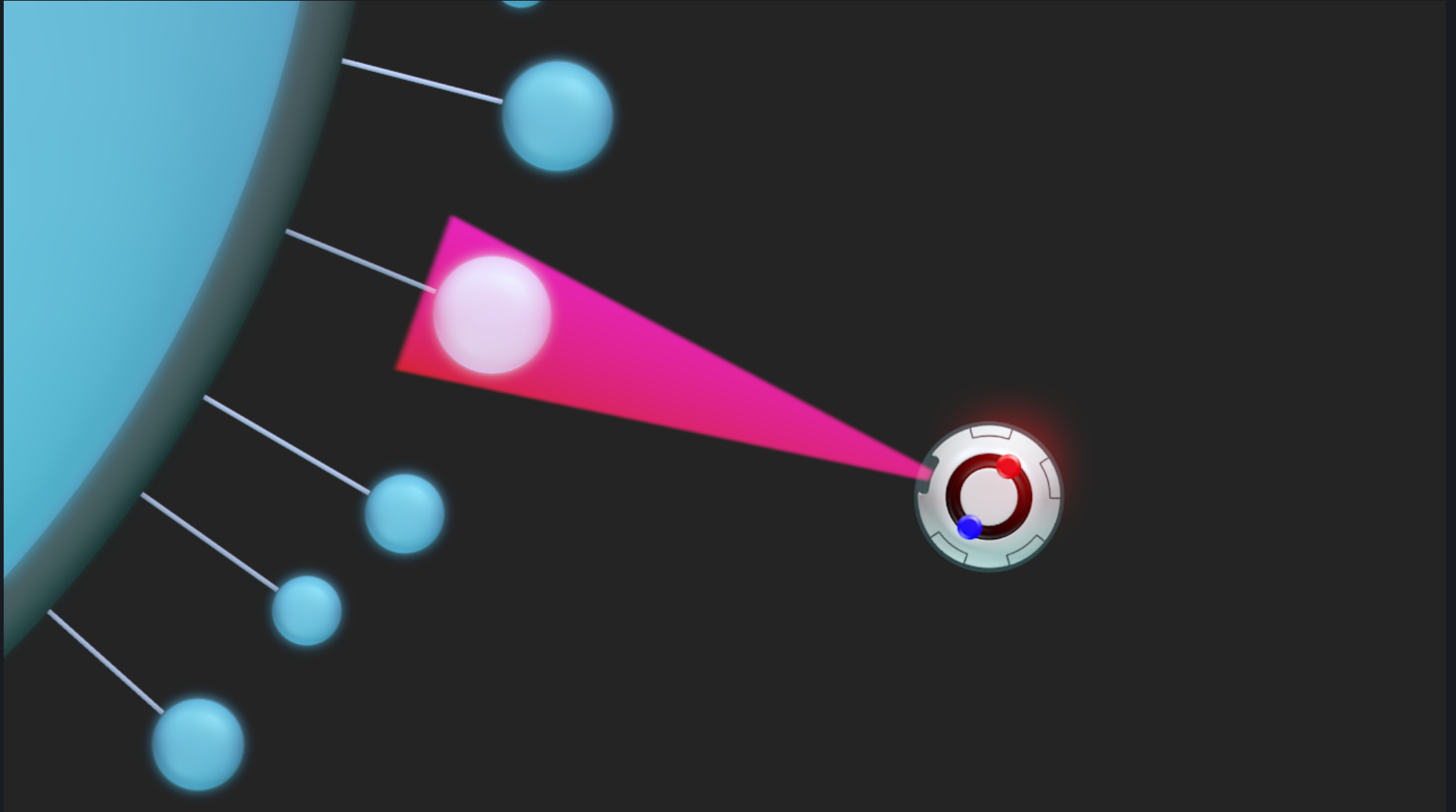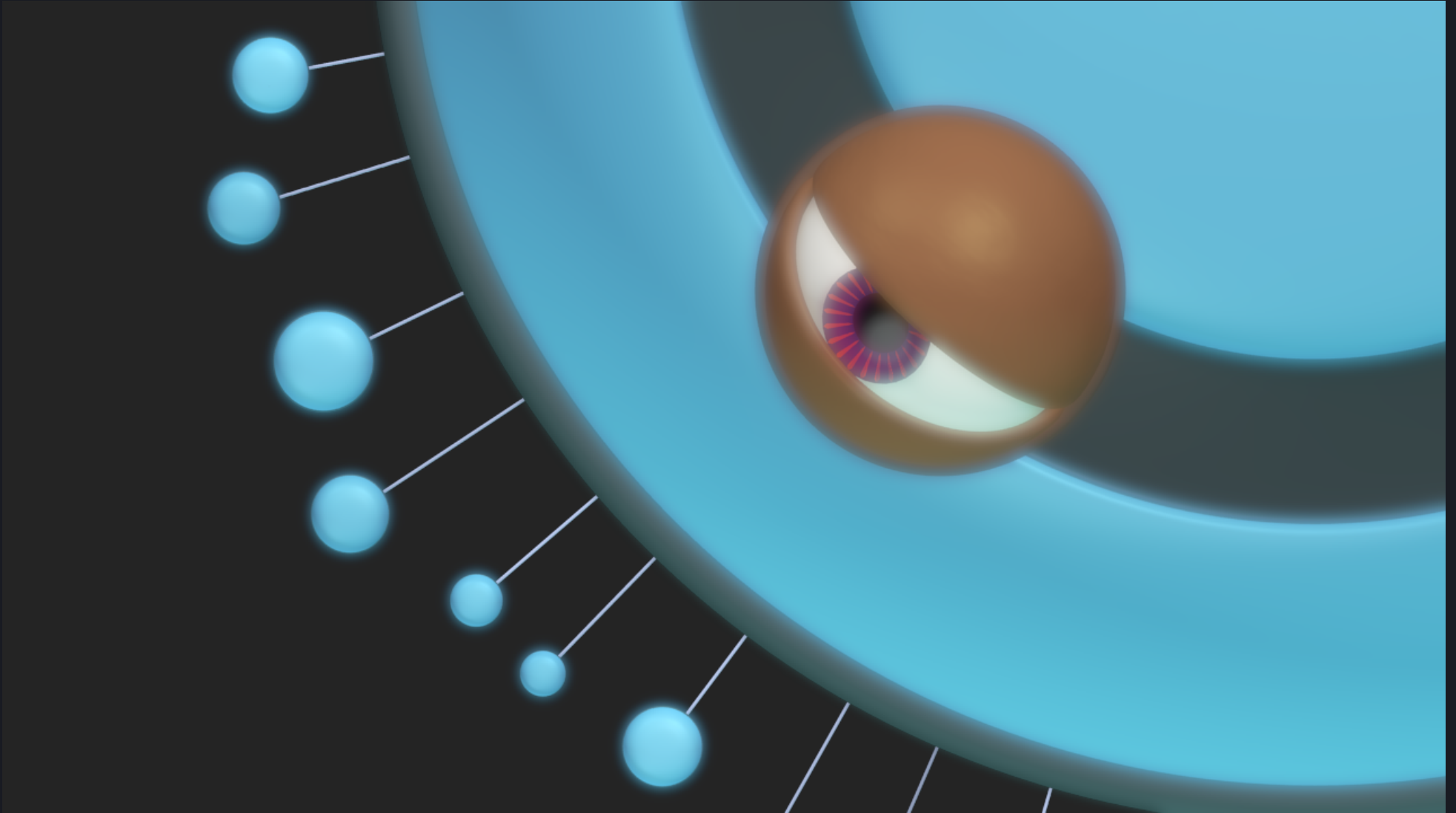
Ad-Driven Engagement

is broken

The economics of ad-driven engagement

- Remove as much friction as possible!

- Monetize attention!

- Monetize controversy!

- Monetize conflict!

The economics of ad-driven engagement

Bad behavior: not just zero cost...

It's profitable!

I know, we'll solve this with reputation systems!

Gameable credit reports

for every aspect of your life!

The Client-Server Model

is broken

Top-Down "Fixes"

are broken

You can't solve centralization

with more centralization

TODO: Emergent behavior & "Mandatory Hugs"

But we have a solution...
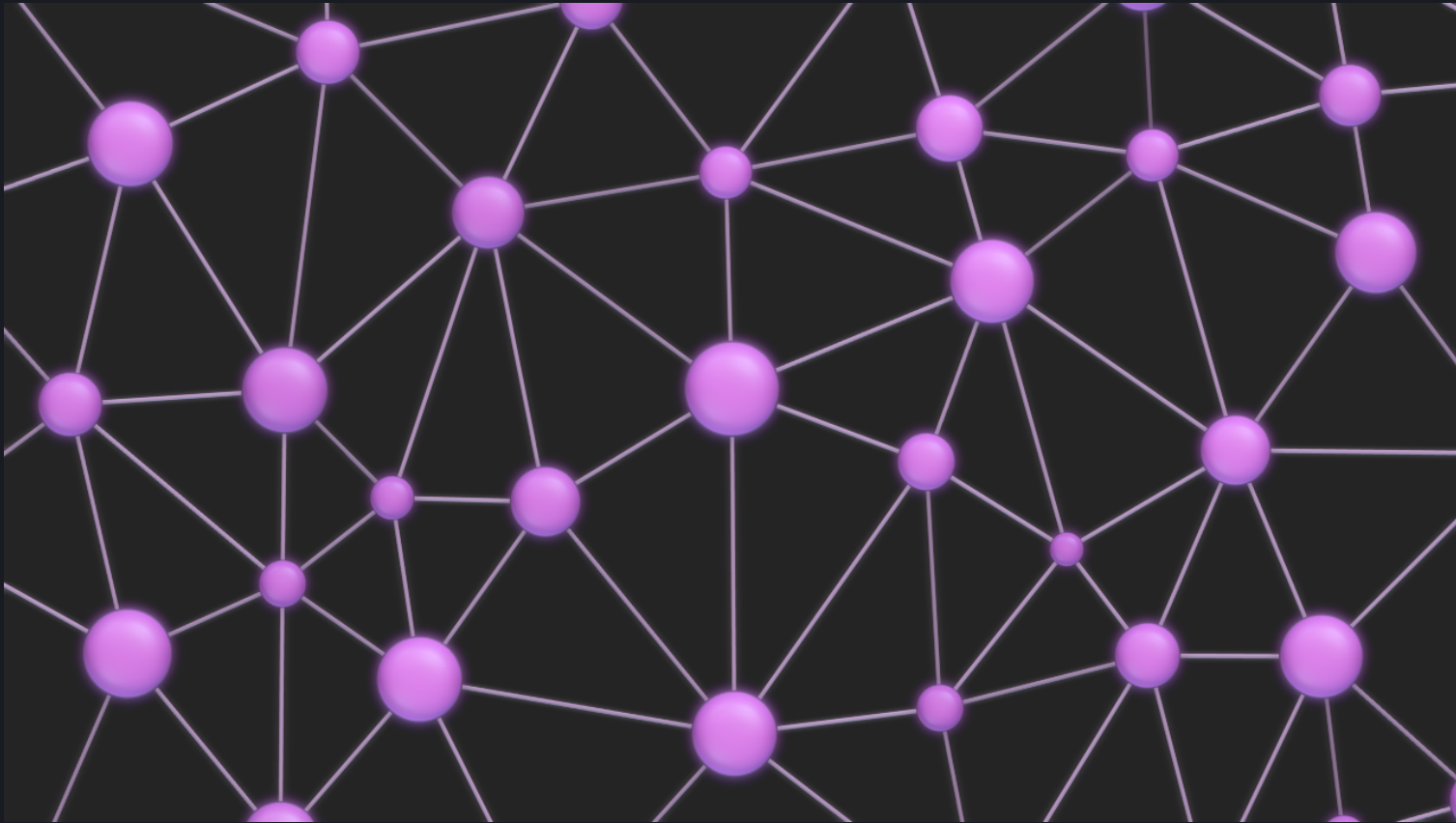
...and we're going to get the internet back

- Introducing the Problem

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Hi, I'm Randy Farmer
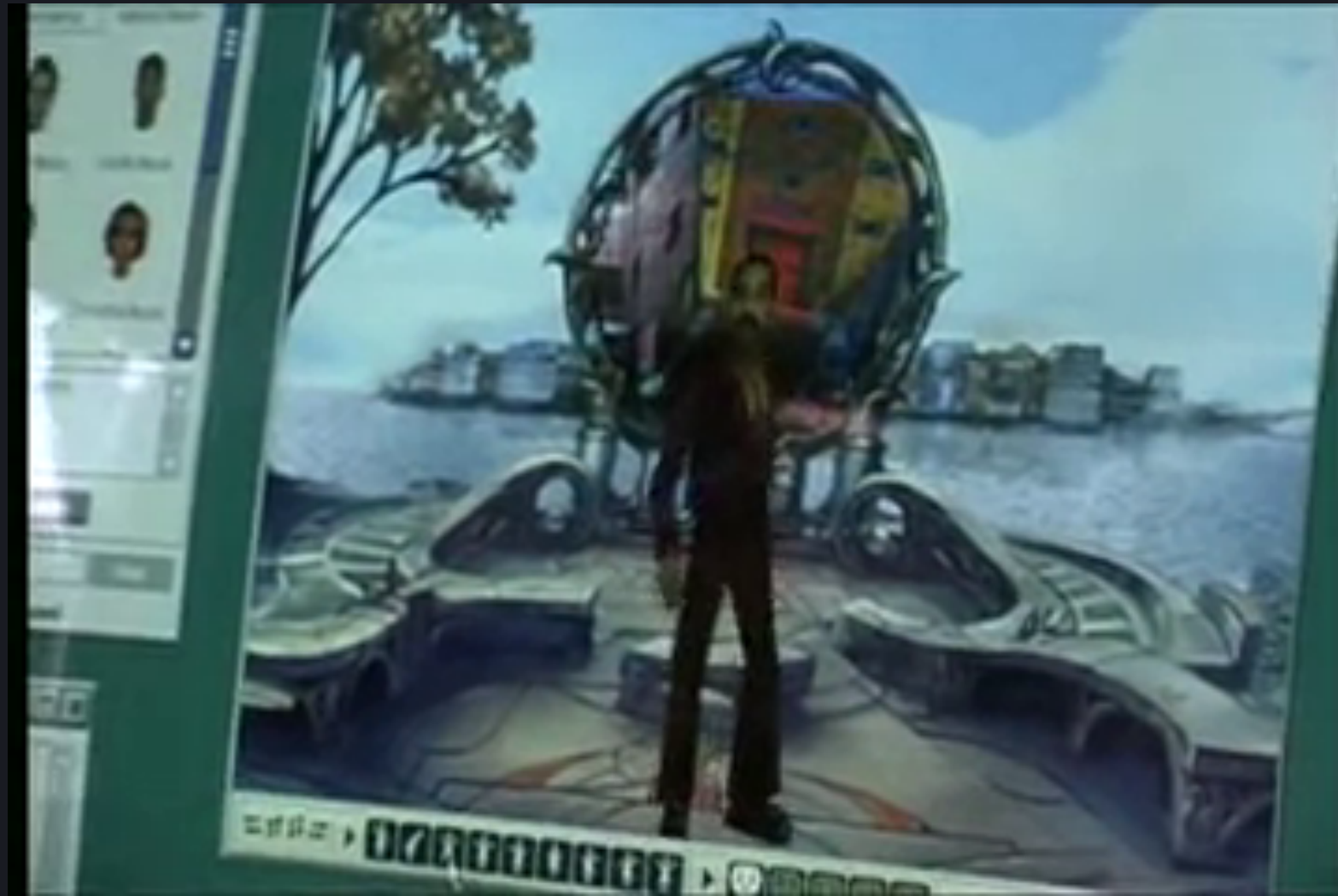
Hi, I'm Randy Farmer

ELECTRIC COMMUNITIES

280 SECOND STREET
LOS ALTOS, CA 94022
415.917.5640
ELECTRIC@COMMUNITIES.COM

Cyberspace Protocol Requirements

Version 27-February-1995

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Proprietary and confidential.

Hi, I'm Randy Farmer

We begin with the overall system goals. We have identified eight high-level characteristics that the Global Cyberspace Infrastructure architecture must possess:

Scalable The technological and institutional components should be sufficient for a system that includes every person and computer in the world.

Open Cyberspace is open to new providers of services without regulation and at low cost.

Decentralized There exists no singular privileged technical or administrative nexus.

Traversable Data and objects can move between users, between services, and between machines.

Commercial Cyberspace contains a complete foundation for economic activity of all kinds.

Social Cyberspace contains the components necessary to support community life.

Secure The technology facilitates making good decisions about which entities can be trusted and protects users from the untrusted ones.

Portable Protocols and service features are logically independent of the technical details of the physical network.

Hi, I'm Randy Farmer

Social Media Clarity

Hi, I'm Christopher Lemmer Webber

Lontime network/user freedom advocate

Creative Commons, etc

Hi, I'm Christopher Lemmer Webber

Hi, I'm Christopher Lemmer Webber
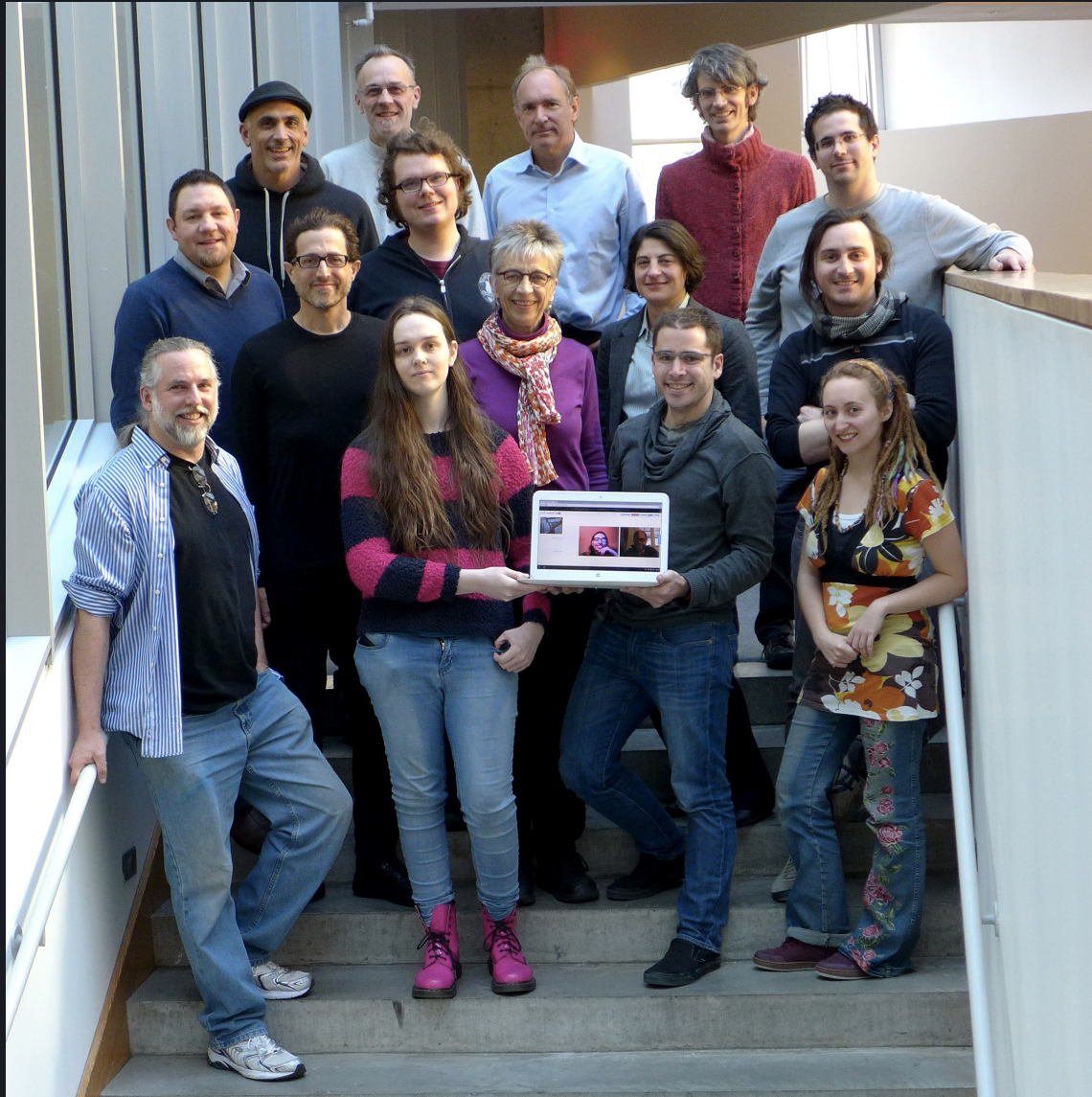
Hi, I'm Christopher Lemmer Webber

ActivityPub

W3C Recommendation 23 January 2018

This version:
https://www.w3.org/TR/2018/REC-activitypub-20180123/

Latest published version:
https://www.w3.org/TR/activitypub/

Latest editor's draft:
https://w3c.github.io/activitypub/

Test suite:
https://test.activitypub.rocks/

Implementation report:
https://activitypub.rocks/implementation-report

Previous version:
https://www.w3.org/TR/2017/PR-activitypub-20171205/

Editors:
Christopher Lemmer Webber
Jessica Tallon

Authors:
Christopher Lemmer Webber
Jessica Tallon
Erin Shepherd
Amy Guy
Evan Prodromou

Hi, I'm Christopher Lemmer Webber

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Hi, I'm Christopher Lemmer Webber

OcapPub: Towards networks of consent

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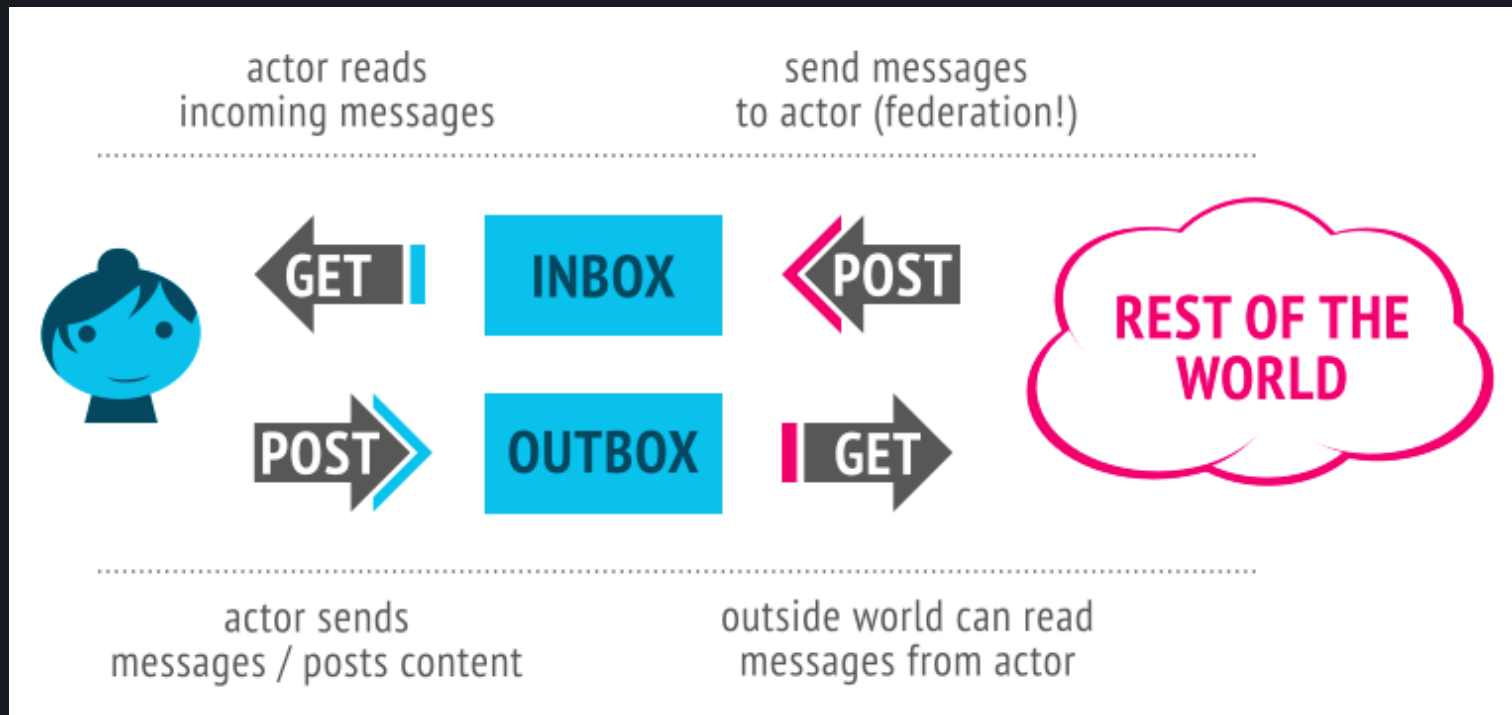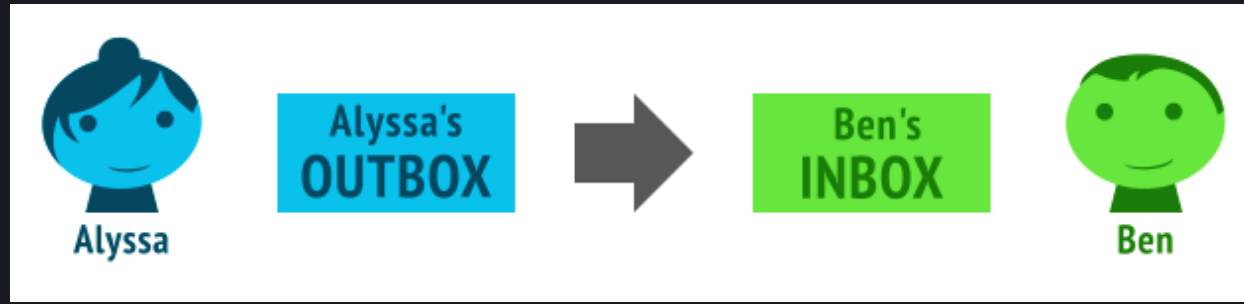*For a broader overview of various anti-spam techniques, see AP Unwanted Messages, which is in many ways informed this document but currently differs in some implementation rollout differs. (These two documents may converge.)*

Conceptual overview

The federated social web is living in its second golden age, after the original success of StatusNet and OStatus in the late 2000s. A lot of this success has been around unification of adoption of a single protocol, ActivityPub, to connect together the many different instances and applications into a unified network.

Unfortunately from a security and social threat perspective, the way ActivityPub is currently rolled out is under-prepared to protect its users. In this paper we introduce OcapPub, which is compatible with the original ActivityPub specification. With only mild to mildly-moderate adjustments to the existing network, we can deliver what we call "networks of consent": explicit and intentional connections between different users and entities on the network. The idea of "networks of consent" is then implemented on top of a security paradigm called "object capabilities", which as we will see can be neatly mapped on top of the actor model, on which ActivityPub is based. While we do not claim that all considerations of consent can be modeled in this or any protocol, we believe that the maximum of consent that is *possible* to encode in such a system can be encoded.

Hi, I'm Christopher Lemmer Webber

Spritely

✿ Social Worlds Await ✿

Convergence? It's no accident!

Open Source Distributed Capabilities

Welcome to *ERights.org*, home of **E**,
the secure distributed persistent language
for capability-based smart contracting.

Quick Start | What's New? | What's **E**?
Smart Contracts | History & Talks | Feedback

Convergence? It's no accident!

Object-Capability Security in Virtual Environments

Martin Scheffler   Jan P. Springer   Bernd Froehlich

Bauhaus-Universität Weimar

ABSTRACT

Access control is an important aspect of shared virtual environments. Resource access may not only depend on prior authorization, but also on context of usage such as distance or position in the scene graph hierarchy. In virtual worlds that allow user-created content, participants must be able to define and exchange access rights to control the usage of their creations. Using object capabilities, fine-grained access control can be exerted on the object level. We describe our experiences in the application of the object-capability model for access control to object-manipulation tasks common to collaborative virtual environments. We also report on a prototype implementation of an object-capability safe virtual environment that allows anonymous, dynamic exchange of access rights between users, scene elements, and autonomous actors.

Keywords: Object Capabilities, Security, Virtual Environments

Index Terms: D.1.5 [Programming Techniques]: Object-Oriented Programming; I.3.7 [Computer Graphics]: Three-Dimensional Graphics and Realism—Virtual Reality; K.6.5 [Computing Milieux]: Management of Computing and Information Systems—Security and Protection

1 INTRODUCTION

The rise of a new category of virtual environments could be observed in recent years: virtual worlds that allow thousands of users to interact and shape their surroundings. The premier example of this kind of virtual world is Second Life (http://www.secondlife.com). In Second Life, a number of tools can be used to add virtual objects to the world. Using a scripting language, users can program their objects to let them interact with other users or objects. It is possible

Figure 1: Screenshot of a prototype virtual environment using object-capability security.

that allow for dynamic assignment and revokation of fine-grained access rights in an anonymous way.

We created a prototype virtual environment using the capability-secure programming language E (cf. figure 1). In our system, capabilities define how actors can be accessed and manipulated (e. g. how they can be moved or how to change their appearance). Capabilities can be attached to the visual representation of their actors to make them publicly available and they can be exchanged

- Introducing the Problem

- Who are we?

- **User stories**

- How to build it

- Extra! Extra!

Alice's communities

- High school math teacher

- Tabletop game player

- Fanfiction author

Alice's agency

```
Game        Social  Ben     Browser
```

```
                                                        ▲  Tavern
                                                        |
                                                        |
                                                        |  Mr. foo
                                                        |  goblin
                                                        |  Sarah
 * Connected to Goblinverse                             |  Ben
 ! You have entered a dark and smelly tavern.  There are
   various patrons milling about.  There are exits to the
   north and south.
 | Ben hits the goblin on the head with a bottle.  The bottle
   smashes to a thousand pieces!
 <goblin> Yow! That hurts!
 <Sarah> Hey, play nice!
 <Ben> Okay, okay....
 | Ben offers the goblin an ale
 | Goblin accepts the ale
 | Goblin drinks an ale
 | Goblin nods with appreciation at Ben
 <goblin> Okay, we're even... I really needed that...      ▼
```

```
 Hi everyone!  How's it going?                      ▼ Chat
```

* Not an accurate mockup, just one I had

TODO: Message board (games, fanfiction) w/ surviving content

(TODO:) Carol wants to PM Alice

- Carol and Alice have no prior relationship, so…

  - Pay two stamps (maybe get refunded)

  - Carol knows Bob who knows Alice, Bob "introduces"

- Alice gives Carol a direct capability

  - But it's attributed to Alice

  - And revokeable!

TODO: Alice and Bob pay Carol back for a pizza

TODO: Bob shows Alice a cool new card game

TODO: Full virtual worlds "buy a beer" example

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TODO: Do we do this? Expand here ;)

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Maybe stuff to incorporate

- Unanticipated collaboration

- More stuff on distributed objects

- Border guards and nation states

- Putting power (rich behaviors) in hands of users

- CONTEXT COLLAPSE!

Maybe stuff to incorporate

- Jack Dorsey quotes

- Complement to freedom of speech is freedom to filter

- Stockholder Syndrome

    - That's why we're a nonprofit?

- We're not replacing Tw&FB w/ same model