Let's Fix the Internet

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State of the network

History of the internet

- Internet was built on trust
- Can't keep rogue actors out
- SPAM
- DOS attacks
- Cookies are bad
- EU made laws against cookies
IoT made it worse

- IoT devices are hopelessly insecure
  -> Block IoT Devices from the internet

IoT Challenges

1. Security and Safety
2. Embedded and Real-time
3. Distributed and Decentralized
4. Main Stream Programming
5. User Content Monetization
so how do we get out of this mess?

- we like to make changes in small steps

BUT

- Costly incremental improvements are slow to adapt: IPv6
- cheap disruptive improvements are adapted quickly: twitter, facebook, web
Elastos is disruptive

BUT

Getting Elastos is as easy as getting a webbrowser
What is Elastos?

1. complete set of C/C++ APIs and frameworks
2. a distributed OS runtime with end-to-end security accross a P2P network
3. Elastos runtime, designed for containers/virtual-machines
4. uses blockchains for authentication
1. C/C++ APIs and frameworks

- Sandbox apps at C level
  - C++ runtime introspection system (CAR)
    - allow distributed apps to talk to each other
  - Elastos rewrote the complete android stack in C++
ELASTOS
REWROTE
THE COMPLETE
ANDROID STACK
IN C++
WHY?

- performance and footprint
- write android style apps in c/c++
- port apps from Android to Elastos
2. distributed OS runtime

- P2P connections between nodes
- end-to-end security and integrity across the internet
- prohibit apps from sending/receiving network packets directly
- every network connection is controlled and sanctioned by the OS

Elastos prevents apps from making their own network connections.
• Identification happens in the application layer
• Every application is responsible for its own user identification
  -> Spam comes from missing user identification
  -> Denial Of Service attacks happen at the network/transport layer before user identification
Elastos moves user identification away from the application layer.

- prevents SPAM, Denial of Service attacks, worms and viruses.
- identities on the app level are replaced with global identities at the OS level.
- a P2P network is used to find the location of identities
3. Elastos runtime is designed for containers/virtual-machines

- CppVM (like JavaVM but for C/C++)
- no need for JNI to write native code
- no need to break out of the sandbox
Elastos Hybrid Programming Model

C/C++ (CAR)

Scripting

Java

Elastos

Easy-to-program, efficient ways to create exciting user experiences for applications and services

Practical portable ways to deploy components across applications, devices, and platforms
Android-Like Programming in JS, Java & C/C++
4. Blockchain

- authenticate user IDs, application IDs, as well as machine IDs
- implement apps that use blockchains
  -> digital asset management
- Elastos coins to enable trading of apps and digital assets
(What are Digital Assets?)

Types of Digital Content Today:

- free to share (GNU, Creative Commons)
- leased, tightly controlled by Distributors

Digital Assets

- Track ownership through the blockchain
- allow reselling of content (enables secondary market)
- Take away control from Distributors to Consumers
Elastos History

- Started in 2000 to build a smartphone OS
  -> lost the race against Android and IOS
- Restart in 2012 adding IoT focus
  -> $30mil funding by Foxcon
  -> reached beta status
Elastos 2015

- Elastos on Banana Pi
- Elastos Smart-Router

Elastos 2016

- Elastos Smart-Phone XT1085
- Elastos on Raspberry Pi 3
2017

- Start blockchain development
- 4K Bitcoins funding

2018

- (January) ICO (2.5K Bitcoins)

Roadmap

- (Spring) Develop P2P Network
- (Spring) Work with Development Partners to build Apps
- (Summer) Sidechains for Blockchain Applications
- (Summer) Framework for Web applications
- (December) Public Mining of ELA Tokens
### Three Open Source Projects of Elastos

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Elastos Source Code on GitHub.com and Elastos.org
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