BUILDING AN INTERNET FOR TRUST ON A TRUSTLESS INTERNET:

APrIGF
Macau
July 1st 2015

An Evolving Governance Model for Emerging Blockchain and Smart Contract Technologies

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Today’s Panel

• **Janos Barberis**
  • Senior Research Fellow at the Asian Institute of International Financial Law, Academic

• **Filipe Farinha**
  • Founder and CEO of Macau Source Limited, Private Sector

• **Leonhard Weese**
  • President, Bitcoin Association of Hong Kong, Civil Society

• **Pindar Wong**
  • Chairman, VeriFi (HK) Ltd, Hong Kong, Private Sector

• **Matteo Ventura**
  • President, Macau Digital Currencies Association, Civil Society
Setting the Scene for Panel Discussion

• Evolving Governance Model
  • Understanding the Existing Governance Models
  • Understanding the Key Innovations
  • Governance Challenges of Financial Technology (FinTech)

• Key Innovation: Blockchain and Smart Contracts
  • Tech Understanding 101 and BIP 101

• Save the Date:
  • October 12-13 @ Cyberport in HK
    • Smart Contracts for Smart Cities
  • November 10-13@João Pessoa in Brazil
    • UN Internet Governance Forum (IGF) 2015 WS 239
Sharing Insight on the Key Innovations

• Understand Rationale Behind:
  • World-Wide-Web Consortium (W3C) – Please JOIN! 😊
    • Driven by Agile Technology Companies + Agile Traditional Companies
    • [Web Payment Interest Group](#) - (June 16-18 NYC)
    • [Cryptoledgers Community Group](#)
    • [Credentials Community Group](#)

• Current Investment Interest In
  • Blockchain Technology (e.g. Bitcoin Protocol Standards)
    • [BlockchainWorkshops.org](#) (e.g. October 12-13 Hong Kon)
  • Smart Contract Technology (e.g. Smart Contract Standards):
    • [Lex Cryptographia](#)

• Increase Policy Awareness, Involvement and Deliberation: e.g. UN [Internet Governance Forum 2015](#)
  • APrIGF – Macau, July 1 Today
  • IGF – Brazil, November, Nov 10-13
EXISTING GOVERNANCE MODELS
Known Governance Models

- Layered (Horizontal), Siloed (Vertical) – Networked?
- Multi-stakeholder
  - ICANN, IGF
- Multi-Lateral
  - ITU
- Characteristics:
  - Open/Closed? Membership Fee or Free? Individual/Corporate?
  - Document Driven Processes (Draft Request for Comments (RFCs))
  - Translation where necessary (Global Internet)
  - Induction + Training Wheels
  - Importance of Technical Competence, Leadership and Neutrality
  - Many Interests at Stake (Registrant, Registrar, Registry)
- Other
  - Trade Associations and Foundations
    - Linux Foundation / Bitcoin Foundation
  - Technical Standards Bodies (IETF, W3C, ITU-T)
  - Patent Non-Aggression Models (Intellectual Property)
    - Open Invention Network (Linux Kernel)
  - Extensible Messaging and Presence Protocol (XMPP) Standards Foundation
The FinTech Ecosystem Opportunity?

• **What is this?**

• **New York City DFS BitLicense**

• How do you regulate what you can’t control?
  • Have we been there before? YES … the Internet!

• **More Money Invested Than in 1990’s Internet**

• **State of Bitcoin 2015**

• Key Understanding:
  • This is an Ecosystem Build!

• **Key Question:**
  • What are the Keystone Species?
Digital Trust for a Civil Internet Society

- Encryption in Binary but Trust is Not: Depends on Context
- Global Commission On Internet Governance
  - Toward a Social Compact for Digital Privacy and Security
- Examples of **Centralized Analog** Fiduciary Trust Structures
  - Backed by the State: Central Public Registries
  - Backed by Community: Regional Internet Registries (APNIC)
  - Rule of Law vs Consensus Policy Processes
  - Periodicity: Daily, Monthly, Yearly
- Evolution to **Decentralized Digital** Fiduciary Trust Structures
  - Backed by Mathematics: Decentralized Public Ledgers
  - Rule of Code vs. Consensus Policy Processes
  - Criticality of Consensus Code -> Importance of Thorough testing
  - Periodicity: Real-Time
What We’ve Learnt: Major Internet Trends

- Coordination Not Regulation
  - Don’t Regulate what you can’t control
  - Complexity is the Enemy: Diversity, Granularity, Cross-Border
  - Velocity makes small wins/errors -> BIG + FAST :
    - Rate of Innovation and Information

- Cooperation without Coordination

- Identity – still the major issue (multi-level Know Your Customer KYC)

- Security and Privacy – Not Mutually Exclusive
KEY INNOVATIONS 101: BLOCKCHAIN SMART CONTRACTS
Accounting: The Language of Business

- Cooking the Books: Existence, Completeness, Valuation, Rights and Obligations, Presentation and Disclosure
- International Trade: Renaissance Innovation Due to International Trade
- Double Entry Booking Innovation
Accounting Revolution Continued

**Existence.** That the assets and liabilities reflected on the balance sheet are true and accurate as of the balance sheet date.

**Completeness.** That the financial statements represent all of the firm’s activities during the time period in question.

**Valuation.** That the amounts on which the financial statements are based are correct or reasonable under the circumstances.

**Rights and Obligations.** That what is owned and owed as reflected by the balance sheet is true and correct.

**Presentation and Disclosure.** That the items in the financial statements are valued and described in the proper way.
Double Entry Bookkeeping

Auditor

Debits

Credits

Debits

Credits
Coordination and Control

Central Hub
Peer-To-Peer Mesh
The Blockchain Innovation ... ?
Is an Accounting Revolution!
Peer-To-Peer (Distributed) Real-Time Audit
Peer-To-Peer = Distributed

- Internet – Network of Peers
- File Sharing – Bittorrent
- Digital Currency – Bitcoin
- Messaging – Telehash
- Enter IBM and Samsung with ADEPT for Internet of Things Governance – Device Democracy
The Blockchain

Like Your Monthly Bank Statements
The New Accounting Revolution

- Golden Rule: Asset = Liability + Equity
- Golden Bitcoin Rule: A transaction is fully spent.
- Blockchain innovation is an advance in
- Distributed Double Entry Bookkeeping
- Building an ‘Internet For Trust on a Trustless Internet’
- Auditor = Independent Guarantor of Financial Information
- The Problem of Agency – Who do they really work for?
- Blockchain: Evolution of Double Entry – Networked Accounting
- There is no concept of Account of Currency!
  - Instead of an Account Holder having a balance of a currency
  - A currency has a history of Holders from which an account is calculated and continuously verified in real-time.
The Smart Contract Innovation … ?
Is a Trust Revolution!
From Analog -> Digital
From Centralized -> Distributed
Building An Internet For Trust on a Trustless Internet*

- Smart Contract(s)
  - Interoperable
  - Programmable Trust
  - Logic

- Block Chain (s)
  - Interoperable
  - Digital Value Exchange
  - e.g. Digital Currency Initiative

* Dan Gillmor 18 Nov 2014 at 13:13
The Asian Opportunity: Last Mover Advantage – Focus on Interoperability

- Europe: 27 Jurisdictions,
  - Harmonized Regulation,
  - Homogenous Market
- USA: 51 Jurisdictions,
  - National Regulation,
  - Homogenous Market
- Asia: 25 Jurisdictions – Horizontal Layered Approach instead of siloed sectorial approach
  - Limited Ability to Scale-Up given Heterogenous Market
  - 25 Infrastructures
  - 25 Sets of Regulation (c.f. Africa in the small)
  - Amending Mandates to include ‘promoting effective competition’ in the ‘interest of consumers’ c.f.UK Financial Conduct Authority (Financial Services Act 2012).
GOVERNANCE CHALLENGES OF BLOCKCHAIN + SMART CONTRACTS

What’s the Same? What’s Different?
For Example – Maximum Blocksize Debate (BIP 101)
Example: Maximum Block Size

• **Bitcoin Improvement Proposal (BIP)** – Existing Process

• **Soft vs Hard Forks: Forked to Death?**
  • From 1 MB -> 8MB Maximum Block Size – BIP 101
  • Software that Doesn’t Evolve Is Software That Dies

• Upgrading of Consensus Code and

• Upgrading of Consensus Processes

• **Example:** **Chinese Mining Pool Operators**

• ‘Mining Consensus’ harder than ‘Mining Bitcoin’? No
  • Importance of understanding Successful Ecosystem Builds
  • Hard Fork = Testing Hard

• Importance of Face-To-Face (F2F) Meetings
  • C.f. APrIGF, IGF, IETF, ICANN, W3C etc. to help establish trust and build consensus
  • Proposed F2F October 14,15@Cyberport in Hong Kong
Thank You! Please join W3C

- **Last Meeting June 16-18 – NYC**
- W3C Web Payment Community Group Chair
  - Manu Sporny msporry@digitalbazaar.com
- W3C Web Payment Administrative Contact
  - Ian Jacobs ij@w3.org
- MIT’s – Digital Currency Initiative
  - Joichi Ito – Director of the Media Lab
  - Brian Forde, Director of Digital Currency
- HK’s – Smart Contract Initiative
  - Smart Contracts for Smart Cities
  - 12-13 October 2015 @ Cyberport