



# Smart Contracts in Practice

## Hong Kong Law Society

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# About Bitquant Research Laboratories

- Financial research laboratory consisting of me and my wife
- Business model – Think of cool things to do and play with technology. Make money to pay the rent
- I like new technology, but I've got to make money from the technology
- Bitcoin derivatives, Algo trading of HK options, Africa trading, Angel investing
- All online and open source – <http://www.bitquant.com.hk/>

# About me

- Background – Computational Astrophysics → Software Development → Quant at major bank → Angel investor
- Physicist of money

# Cars and Freeways

- Freeways – blockchain
- Cars - contracts
- Bitquant is focusing on developing the cars

# Freeways - Blockchain

- Blockchain – Permanent and agreed cloud based storage
- Bitcoin – Blockchain stores transfer data
- Ethereum – Calculations on the blockchain
- IPFS – Store files on the cloud

# Use case

- Assets under management – HKD 3 million. Half in options trading. Half in angel investing
- Do not want to put it into banks or to buy property.
- Zero percent interest + pushes up the property bubble
- Want to move capital from property to SME's

# Issues with SME lending in HK

- High transaction costs – Cannot recover costs with standard fixed interest rates
- SME's need flexible funding conditions
- Needs to be a debt based instrument
  - Private equity is hard to sell in HK
  - Manufacturing firms need working capital
  - Regulatory issues

# Why smart contracts?

- Need to let borrower know the conditions of the contract
- Need allow efficient securitization and tracking
- Flexible financing – Alibaba problem



# Smart contracts

- English common law
- Javascript
- Inspiration from
  - Derivatives technology in major banks
  - Islamic finance
- Legal issues
  - Where is the contract situated?
  - What is part of the contract?
  - How do you record the contract?
  - How do you execute the contract?

# Loans issued

- Size of loan HKD 100k – All loans unsecured – Interest rates typically 15%
- Loan to holding company of startup who was finishing up degree. Interest only payment until employee was employed
- Loan to company to fund purchase and equipment from Shenzhen. Interest only with balloon payment
- Loan to company to fund Kickstarter campaign. Loan became due immediately if Kickstart campaign hit a certain level
- Cash advance against high technology grant from Hong Kong company

# What the contract looks like

- The contract itself – series of payoffs
- The viewer – takes algorithm and displays it
- Explanatory notes – Explains the terms of the contract
- Execution
  - Digital fingerprint and two sheets of paper
  - Side agreement with borrower representing that explanatory notes are a good faith interpretation of contract

# Air Button

- <http://www.air-button.com/>
- A button that you can tape to your phone
- Company funded by smart contract

# Regulatory issues

- SFO exemption – Private placement and private equity exemptions
- MLO exemption – Import and export transaction exemption
- Seeking money lenders license to allow advertising
  - Police objection – You working from a co-work space
  - Our counter-objection – Police policy does not take into account technology and social changes and as this impacts Hong Kong's role as international financial center, this is not valid under Basic Law 109
  - Case pending before Magistrate's Court

# Regulatory Challenges

- Bank compliance!!!!
- HK regulation is very, very good
- HK regulators are very, very good once you understand their mindset
- Big problem – Communications and cultural issues
  - Systems that work for big banks don't work for SME's
  - Bureaucracy sees their role as umpires and not cheerleaders
  - Lawyers see their role as moderators and not cheerleaders
  - SME's are timid and frightened of bureaucracy and there are no good lines of communication. Also very easily frustrated which turns into anger
- Case study – How the SFC unintentionally killed crowdfunding in HK with May 2014 circular
- Current situation – Fixing Stored Value Facility Ordinance

# What next

- Think through insolvency and near insolvency issues
- Regulatory issues
  - Work on SVF Ordinance
  - Work on MLO issues
- Work on user interface
- Find funders and people to use this technology
- Change the culture!!!!
- MAKE MONEY!!!!