

# CyberMiles *5miles*

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**A new blockchain and “master token”  
optimized for e-commerce**

By Michael Yuan, PhD

- Chief scientist at CyberMiles Foundation
- Author of upcoming book from Addison Wesley: “Code is Law: A Developer’s Guide to the Blockchain”. (co-author with Tendermint founder and CEO Jae Kwon)
- Lead of Cosmos Foundation’s DPoS community program: <http://cosmosvalidators.com>
- Ex Venture Investor
- Ex Healthcare researcher (over \$5 million in research funding from US government)
- Ex Product manager at Red Hat
- Committer and contributor to multiple high profile Open Source projects
- Author of 5 books on software engineering
- PhD in astrophysics from the University of Texas at Austin



- The essential functions of modern corporations
  - Reducing transactional costs through vertical integration (centralization)
  - Organizing individuals into collaborative units for production
  - Only existed for several hundred years
- Network-based production
  - Transaction cost is greatly reduced through new technologies
  - Access to diverse talent pool
  - Untrusted entities work together to produce services and goods
  - Already many successful examples: Open source, Wikipedia, Craigslist, Kickstarter, Angel List, crowd sourcing.
- Disruptive technologies
  - Internet: Information intermediaries
  - Blockchain: Monetary intermediaries

- Software production is the most important production today
- Open source has won
  - Microsoft is now the #1 contributor to Open source!
- Production is decentralized
  - Talents come from anywhere
  - Complete meritocracy
  - "given enough eyeballs, all bugs are shallow"
- However ...
  - Trust is established through slow consensus
  - Lead committers and committees have a lot of power (centralization)
  - Ill equipped to distribute monetary compensations

- Better security (no centralized hacking target)
- Less liability (not responsible for data you do not control)
- More collaboration (no need to give up control of data)
- Reduce credit risk (transparency of historical events)
- Reduce counter party risk (decentralized settlement)
- Less conflicts (transparency of reputation)
- Better governance and conflict resolution (bonds)
- Fair distribution (no aggregation of profits at the center)

**Why does Uber (esp w/ self-driving cars), Airbnb, Facebook, or eBay need to exist?**

Be very skeptical about projects that promise to reach consumer level adoption (millions of users) through business model innovation alone.

**The current state-of-the-art blockchain can only handle ~10 transactions per second.**

It's very attractive to the libertarian viewpoint if we can explain it properly.  
I'm better with code than with words though.

Satoshi Nakamoto, 11/14/2008

	What coders mean	What business people think
Consensus	Untrusted maintainers of the network reach agreement on which transactions are valid.	Untrusted business partners and workers collaborate to produce products.
Smart Contracts	Code that get executed when a transaction is recorded on the blockchain.	Transactions in the real world being automagically enforced by code on the blockchain.
Cryptoeconomics	Mechanisms to incentivize network maintainers to contribute computing resources, and not to cheat.	The economics and incentives for real world people to collaborate based on the rules in the blockchain.

- Performance
  - Leading networks can only handle 10 TPS
  - PoW is optimizing for the wrong things ...
    - PoW consumes electricity comparable to whole country's
    - The Bitcoin hash power is 1000x Google's entire cloud
- Scalability
  - Network slows down when it grows (adding more computers makes it worse)
  - The negative network effect is potentially fatal
- Developer productivity
  - The EVM is very hard to develop for
  - Even very simple Smart Contracts are bug ridden
  - No complex Smart Contracts has emerged
  - Case: The Bancor Smart Contract-based token

```
bogatyi@node: ~
bogatyi@node:~$ geth --rpc --unlock 0x0f1a9300a208f616cb41d9a5febabdd0fc374c6e
INFO [08-14|17:15:11] Starting peer-to-peer node instance=Geth/v1.6.7-stable-ab5646
c5/linux-amd64/go1.8.1
INFO [08-14|17:15:11] Allocated cache and file handles database=/home/bogatyi/.ethereum/g
eth/chaindata cache=128 handles=1024
INFO [08-14|17:15:14] Initialised chain configuration config="(ChainID: 1 Homestead: 115
0000 DAO: 1920000 DAOSupport: true EIP150: 2463000 EIP155: 2675000 EIP158: 2675000 Metropolis: 92
23372036854775807 Engine: ethash)"
INFO [08-14|17:15:14] Disk storage enabled for ethash caches dir=/home/bogatyi/.ethereum/geth/e
thash count=3
INFO [08-14|17:15:14] Disk storage enabled for ethash DAGs dir=/home/bogatyi/.ethash
count=2
INFO [08-14|17:15:14] Initialising Ethereum protocol versions="[63 62]" network=1
bogatyi@node: ~
82 class BancorFrontrunner(object):
83
84     def __init__(self):
85         self.finished = False
86         accounts = send_request({'method': 'eth_accounts', 'params': []})
87         if len(accounts) != 1:
88             raise Exception('You should have exactly one address activated.' +
89                             'Got {0} instead.'.format(accounts))
90         self.address = accounts[0]
91
bogatyi@node:~$ python one_frontrun.py
-----
Mon Aug 14 17:29:54 2017
('Front-running on address', u'0x0f1a9300a208f616cb41d9a5febabdd0fc374c6e')
-----
Mon Aug 14 17:29:54 2017
('Filter set:', u'0x4c14e7c76497627543e4e2ab0a4b0316')
```

“Turns out, all it takes is about 150 lines of Python to get a working front-running algorithm.

An attacker could have had a 117% ROI on the money they invested into the attack over July and August, chipping away from other Bancor users.

I executed the attack against a single trade, making \$150 net of all fees.”

- New consensus mechanisms
  - Proof of Stake
    - Delegated Proof of Stake
    - Randomly selected validators
    - Also incentivize buy-and-hold tokens
  - New approaches to Proof of Work
  - Optimistic algorithms
  - Can improve TPS to 10,000 and more
  - Notable projects: CASPER, Tendermint, Tezos, Algorand, Hashgraph etc.
- Off chain computation
  - Truebit: solving the verifier's dilemma
  - Computation: off-chain, results: spot checked, consensus results: recorded on-chain
  - Generally not an issue for Proof of Stake systems

- The Smart Contract problem is not resolved
  - The VM and tools are too primitive
  - Often require external non-standard components such as Oracle
  - The line between on and off-chain is blurry
  - Reinventing years of enterprise software R&D
- Must address enterprise computing problems next
  - Standardization
  - Reusability
  - Developer productivity
  - Robustness
  - Security

- Linux
  - Rooted in decentralization / libertarian ideals
  - Collaboration of untrusted parties
  - Mainstream adoption happened after
    - Many reusable enterprise libraries and packages are developed
    - Standardization of key libraries and packages
    - Commercial support from business leaders
- Java
  - Started as a all purpose language platform
  - Always have strong community governance
  - Mainstream adoption happened after
    - Reusable enterprise frameworks are developed
    - Those frameworks are standardized through JCP process
    - Commercial support from companies other than its inventor

A close-up, low-angle shot of a classic car's engine and steering wheel. The engine is a V8, with various components like the intake manifold and valve covers visible. The steering wheel is a three-spoke design with a wooden or leather finish. The car's body is painted a vibrant red. The lighting is warm and dramatic, highlighting the metallic textures and the polished surfaces of the engine and wheels. A white horizontal line is positioned above the text.

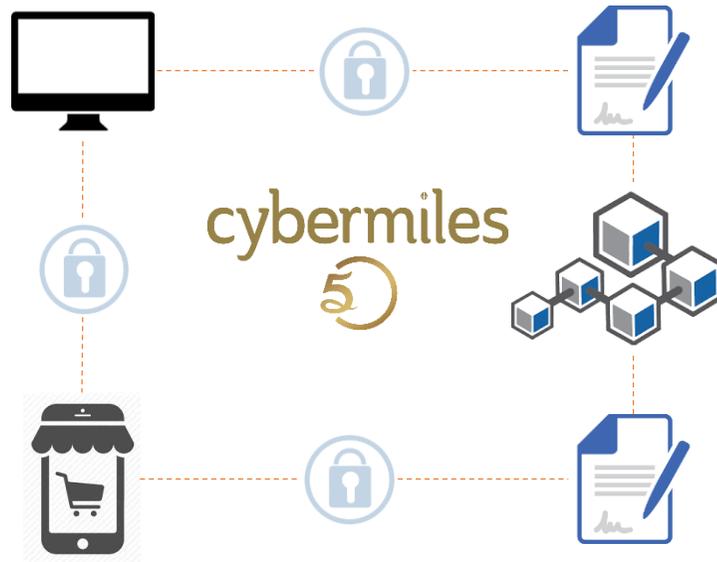
# What is CyberMiles

- Ethereum for e-commerce
  - Independent public blockchain with support for 10,000+ TPS
    - Delegated Proof of Stake
  - Specifically optimized for e-commerce
    - Decentralized settlement
    - Smart Business Contract
    - Enterprise middleware technology stack
  - Supports ICOs of other e-commerce applications
- Large network effects from start
  - 12 million users and \$3 in annual transactions
  - Delegated Proof of Stake
  - Secure user identity and credit data is the basis for e-commerce

- Enterprise technology adoption is based on full stacks
  - Reusability and encapsulation are key
  - Proven security
  - Developer productivity
- The CyberMiles stack
  - Rules engine
  - Business process engine
  - Distributed database and file system (for transient data)
  - Distributed webhooks and oracles
  - Much improved VM
  - Pre-packaged Smart Business Contracts

- Execution of Smart Business Contracts
  - Similar to ETH's use in Ethereum
- Decentralized settlements
  - Similar to XRP's use in Ripple
- Community-based incentives
  - Similar to many other in-application tokens

- Jumpstart the network through biz dev
  - The value of the network depends on the
    - Number of useful Smart Business Contracts
    - Number of user identities and transaction history
    - Transactional volume
  - 5miles LLC brings in
    - 12 million US-based e-commerce users
    - About \$3 billion in transaction volume
    - Deep business expertise in automating business contracts
- Incentivize token holders through consensus design
  - Delegated Proof of Stake
  - Strongly encourages stakeholders to retain their stake
  - Strongly encourages stakeholders to participate in network growth



- Optimize smart contract functions to support wider commercial adoption
- Establish modules for 12 key marketplace categories & potentially 371 sub-categories to support rapid contract innovation
- Partner with 3<sup>rd</sup> party platform developers to utilize the smart contract modules

## Categories

- |                 |                     |                          |                 |
|-----------------|---------------------|--------------------------|-----------------|
| • Buy and sell  | • Local Service     | • Personal Finance (B2C) | Wholesale (B2B) |
| • Housing/ Rent | • Remote freelance  | • Crowdfunding           | Source Tracking |
| • Jobs          | • Lease (B2C & C2C) | • Voting/ Gambling       | Antifraud       |

- Identity management
- Decentralized credit bureau
- Provide a base token for other e-commerce applications
- Small business loans
- Community-based arbitration and conflict resolution
- Supply chain finance
- Product tracking and authenticity records



# 5miles – A Leading P2P & Local Marketplace Platform in the US



5miles is a **mobile marketplace app with leading advertising and ecommerce technology** that allows users to buy and sell second-hand goods and services across all the key categories

## Hyper-Local Marketplaces

## Mobile, Real-time, Location-Based

*A market leader & innovator for mobile age*



### Used Car Sales

- **Fast-Growing, Top 10 Auto Sales Platform** <sup>(1)</sup>
- **5,000+** new listings per day
- **1,700** cars sold per day
- Already 2,500+ “member” dealers on monthly packages



### Merchandise

- **Top 10 Shopping App** <sup>(2)</sup> and **3rd largest Used Goods App**
- **20+ million** items listed since launch; **7 million** active SKU
- **~15,000** items sold per day through 5miles



### Local Services

- **Fast-growing Local Services Platform** launched in Sep. '15
- **3,000+** sales leads per day
- **80,000+** service providers on the platform



### Housing

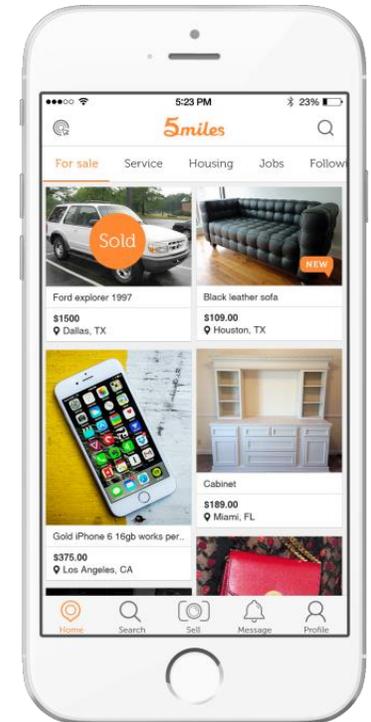
- **Recently launched, already with 1,500+** listings per month



### Job Listings

- **3 million** active job-searchers on 5miles platform

*In-Development*



# Company Has Achieved Large Scale Since Its 2015 Launch



\* Data as of June 2017; (1) Average of March-June 2017; (2) Includes \$10M pending close

# Already Established as a Top 10 Shopping App in the US

## Top US Shopping Apps Ranking – By Usage

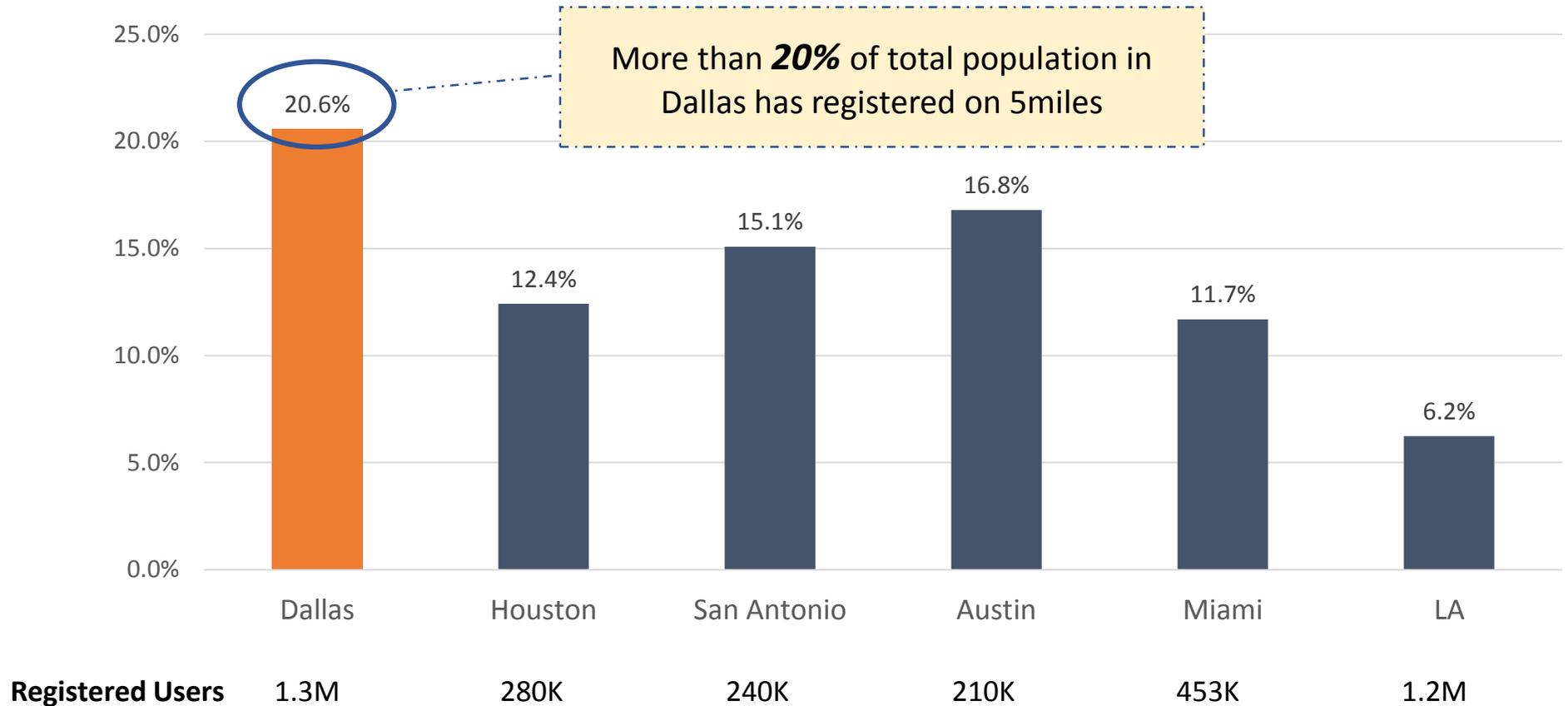
SimilarWeb		Analyze any Website or App	Products	Solutions
App	Publisher	Usage Rank		
1	 Amazon	Amazon Mobile LLC	1	
2	 Amazon Shopping	Amazon Mobile LLC	2	
3	 eBay - Buy, Sell & Save Money. Best Mobile Deals!	eBay Mobile	3	
4	 OfferUp - Buy. Sell. Offer Up	OfferUp Inc.	4	
5	 letgo: Buy & Sell Used Stuff	letgo	5	
6	 Wish - Don't Overpay	Wish Inc.	6	
7	 Groupon - Shop Deals & Coupons	Groupon, Inc.	7	
8	 Walmart	Walmart	8	
9	 Slidejoy - Lock Screen Cash	Slidejoy	9	
10	 Smiles: Buy and Sell Used Stuff Locally	Smiles LLC	10	
11	 Amazon Offers	Amazon Mobile LLC	11	
12	 AliExpress Shopping App - Coupon For New User	Alibaba Mobile	12	

*Smiles*

- **#8** shopping app if combine Amazon apps & take out Slidejoy, a utility app

# 5miles' App Has Proven Ability to Reach Deep Market Penetration

## # of Registered Users as % of Total Population in Key Markets



# Extremely Active User Base Leading To Large Volume of Transactions

	 Daily Activity	 Weekly Activity	 Monthly Activity
Ave. # of Sessions Per User	2.2 sessions	6.0 sessions	14.0 sessions
Ave. Duration Per User (h:mm:ss)	0:22:04 <i>(24 min in core cities)</i>	1:01:15 <i>(1:05:15 in core cities)</i>	2:18:09 <i>(2:38:00 in core cities)</i>

- **1+ million people** meeting per month to complete transactions
- **~500,000** completed transactions per month
- Transaction value of **\$3 billion** on annualized basis completed through 5miles

# Team With Proven Track Record In Marketplaces & Online Marketing

**CEO / Founder**  
Lu, Lucas



Formerly CTO of Light In The Box (LITB), General Manager of Taobao Mobile (Alibaba)

**CFO**  
Chan, Garwin



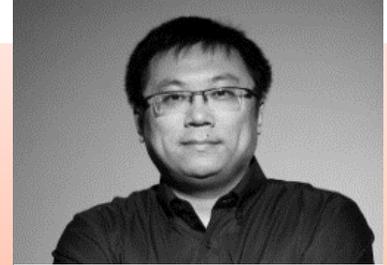
Formerly Managing Director at Founder H Fund, VP at Bain Capital

**CMO & Ad Platform**  
Chen, George



Formerly Founder at Digital Matrix, VP Ad Tech Products at Allyes, Founder at Nirvana Info

**COO**  
Zhai, Fei



Formerly Senior Manager at TMALL (Alibaba), leading female apparel vertical

**GM-US**  
Cantu, Ricardo



Formerly VP of Good Deeds Wireless; Sales Manager & Financial Advisor at Morgan Stanley

**Sales Director**  
Coleman, Valerie



Formerly sales director at Monster, and sales director at Autotrader (12 yrs experience)

**Auto Strategist**  
Troxel, Trey



Formerly Sales & Marketing Director at Randall Noe Auto, Sales Director at vAuto & Autotrader

**CTO**  
Lv, Yi



Formerly Tech Director at Zhangyue Technology, a leading e-reader platform

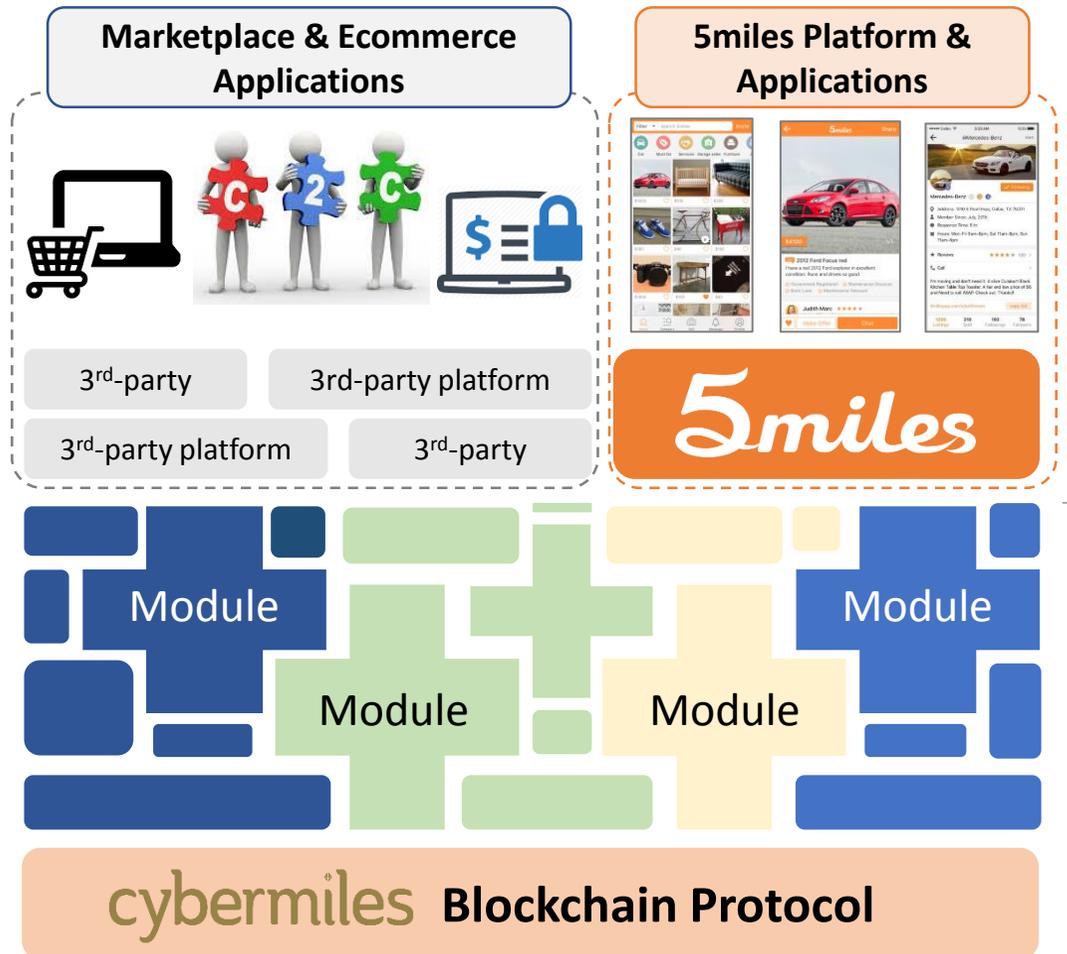
**Project Manager**  
Mehra, Natasha



Formerly project manager at REthink, mobile strategy consultant at Accenture

# Focus of Blockchain Development: CyberMiles Crypto-Currency

## Illustrative View of CyberMiles Modules



- Launch CyberMiles blockchain to serve as foundation layer for real-world commercial applications; Modules of smart contracts can be built on top of this foundation layer
- Strike proper balance between platform compatibility & features depth to maximize the usability of smart contracts

## 5xlab

- Develop base-level modules of smart-contracts based on CyberMiles
- *Near-term priority on launching CyberMiles applications for 5miles*