Blockchains
Intersec with the Internet and Telecom

January 2018
Overview

› Blockchains as platform to build decentralized applications on a peer-to-peer basis has the potential to unleash powerful transformation in multiple industry verticals.

› The Internet and telecom sectors include many areas where blockchains present an alternative technology. Which applications have merit, and which don’t?

› This is an area that Xona Partners has been investigating due to its far-reaching consequences.

› In this overview, we highlight blockchains in the Internet and Telecom space.
Bitcoin Hype

› Bitcoin future is uncertain, but blockchains is here to stay

› Critical thinking, beyond the hype, is sorely lacking

Easy access to information over the Internet accelerates hype bubbles
Blockchains is NOT Bitcoin

- Bitcoin uses blockchains as an **open ledger** to store transactions
  - The latest block linked to the preceding ones using digital signatures

Do not confuse bitcoin with blockchains:

- **Blockchain ≠ Protocol**
  - HTTP or SMTP
- **Bitcoin ≠ Application**
  - Web browser, or email
To decentralize, or not to decentralize — that is the question!

Decentralization:

Technology alternative to human institutions

Legal  
Financial  
Social

What problems are we trying to solve?  
What problems could we be introducing?
Characteristics and Applications of Blockchains

- Immutability of record
  - Public sector records
  - Health records
  - Credit reporting
  - Cryptocurrencies

- Smart contracts
  - Supply chain
  - Legal processes
  - Leasing
  - IoT applications
  - Loyalty programs

- Disintermediation of trust
  - Foreign exchange
  - Crowdfunding
  - Fintech

- Insurance
- Media

- Legal processes
- Leasing

- IoT applications
- Loyalty programs
State of the Telecom and Internet Ecosystem

Internet
Network effect leads to data monopolies

Telecom
Heavy infrastructure spending, mass is critical, consolidation leads to monopolies

[Graph showing revenue and profit for Amazon, Google, and Microsoft for the quarter ending Sep 30, 2017.]

[Diagram showing overlapping circles for AT&T, Verizon, T-Mobile, and Sprint.]
Questions

For purpose of illustration, these are some of the questions we are interested to answer:

1. What Internet and telecom applications could benefit from blockchains?
2. Which applications are likely to get implemented first?
3. What parameters make successful blockchain use in the Internet and telecom possible?
4. What are the implementation tradeoffs and considerations?
5. Which platforms are most suited for Internet and telecom applications and for what reasons?
6. Who is investing in blockchain technology for the Internet, telecom and IoT?
7. What investments in Internet/IoT/telecom-related blockchain are focused on?
8. What are the objectives of leading blockchain consortia and which to follow?

Blockchains came onto the scene in 2009 as the technology that powers bitcoin. Blockchains technology has since spread to enable applications in many other industry verticals outside of finance.
Applications of Blockchains in Telecom / IoT

› A few examples to illustrate the potential of blockchains in IoT applications
  - Among the many cited applications, some are likely to benefit while blockchains may never be used in others

- **Asset Transactions and Micropayments**
  Low blockchain-based transaction cost enables micropayments for digital assets such as music, games, gift cards, loyalty cards, etc. It also enables payments for IoT enabled services such as asset leases/rentals

- **Smart Contracts**
  Details of transaction elements among multiple parties are securely stored in blockchains and processed automatically as each milestone is fulfilled

- **Smart Cities**
  Blockchains are transparent and auditable allowing for smart charging among other services

- **Healthcare**
  Secure electronic healthcare storage and transmission on permissioned blockchains

- **Identity Management**
  Blockchain-based identity management platform to enable authentication across devices, apps and organisations
Applications of Blockchains in the Internet

Applications of blockchains in the Internet infrastructure focused on the topics below. But are these mostly random attempts to find problems to solve? After all, other solutions to these challenges exit which have failed for different reasons. In this case, what could be the low-hanging fruit for blockchain applications in the Internet infrastructure?

Alternative DNS
Applications of blockchains to Internet distributed services such as naming, address allocation, etc.

IP Address Allocation
Application of blockchains to GP/BGP/Multicast routing and to P2P traffic distribution models

PKI and Digital Certificates
Blockchains as a complementary and alternative model to PKI based security infrastructure
Blockchains Speed of Adoption Framework

Is blockchain a transformative or disruptive technology?

Applications: Retail gift cards
Comparative: Amazon

Applications: Bitcoin payments
Comparative: Email

Source: HBR.
Xona Blockchain Services

- Business Case Development
- Feasibility Analysis
- Future-State Roadmap
- Technology Strategy/Roadmap
- Functional Use Cases
- Prototyping/PoC Development
eXponent workshops leverage Xona Partners knowledge base to enable executives in technology companies to acquire knowledge in adjacent technologies that could impact their business. We provide factual insights into emerging technologies to differentiate hype from reality and to assess threat and opportunity.
About Xona Partners

Boutique Advisory Firm Specialized in Developing New Technology Ventures

Private Equity & Venture Funds
M&A due diligence

Technology Corporations
New business ventures; spin-outs, spin-ins

Governments, Regulatory & Policy Makers
Market & technology assessment

Telecom
Internet
AI
IoT
Big Data
Cloud & Data Centers
Contact: advisors@xonapartners.com
Web: www.xonapartners.com
Partners & Advisors: www.xonapartners.com/team