Become a Leader, Not a Casualty in the Digital Age: How Blockchain will Transform Your Business

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@MikeJWalker
By 2030, the business value added by blockchain will surge to exceed $3.1 trillion.
Hype Machine in Full Effect

Industry Hype Is Increasing

- Initial Coin Offering
- Blockchain in Government
- API Economy
- Quantified Self
- Cryptocurrency and Blockchain Regulation
- Blockchain in Education
- Blockchain in Life Science
- Insurance
- Decentralized Autonomous Organization
- Blockchain in Utilities
- Blockchain in Healthcare
- Supply Chain in Manufacturing
- Blockchain for CSPs
- The Programmable Economy
- Smart Contracts
- Digital/Cryptocurrency Fiat
- Blockchain in Oil and Gas
- Blockchain for Customer Service

Blockchain

- Distributed Ledgers
- Blockchain in Banking and Investment Services
- Internet of Things
- Blockchain

Bitcoin

- Cryptocurrencies
- Digital Commodity Exchanges
- Green Money
- Bitcion

- Complementary Currency

Years to mainstream adoption:
- © Less than 2 years
- ● 2 to 5 years
- ▲ 5 to 10 years
- ▲ More than 10 years
- ✖ Obsolete before plateau

As of August 2017

From "Hype Cycle for Blockchain Business, 2017," 10 August 2018 (G00332628)
## Business Models Shifting to Ecosystems

<table>
<thead>
<tr>
<th>Sharing Economy</th>
<th>Gig Economy</th>
<th>Peer-to-Peer (P2P) Economy</th>
<th>On Demand Economy</th>
<th>Data Economy</th>
</tr>
</thead>
</table>

1. **Multi-sided business model**

2. **New forms of value exchange**

3. **Enabled by endless connectivity, AI, edge, and compute**

4. **Net-new and predictive insights**
Three Recommendations
Three Recommendations

1. Enterprise-Grade Blockchain Ecosystems are the Next Wave
2. Create a Deliberate Blockchain Business Model
3. Leverage Microsoft’s Approach to Enterprise-Grade Blockchain Ecosystems
A blockchain ecosystem is a group of companies that has been formed to explore use cases involving blockchain and smart contracts in the hope of developing capabilities that can be deployed in production. As a group, the consortium can undertake initiatives that are beyond the reach of any one member. In the case of blockchain, the group enables the creation of a network that is fundamental to decentralized blockchain implementations.

- Gartner 2019
Blockchain Digital Ecosystem Capabilities

Self-Sovereign Data
- Self-Sovereign identity
- Data confidentiality and privacy

Tamper-Resistant Data
- Cryptographically signed
- Irrevocable transactional records
- Data Hashing
- Zero Knowledge Proofs
- Anonymization of Data

Peer to Peer Data Collaboration
- Shared ecosystem DB
- Common data exchange and standards
- Interoperability
- Availability
- Quality and Robustness

Distributed Governance
- Distributed business terms and conditions (T&C)
- Smart contracts
- Decentralized autonomous organization (DAO)

Digitalization of Business
- Tokenization of assets
- Digital Twins
- Decentralized Solutions (Daaps)
- Decentralized consensus
Rosetta Stone for Consortiums
Framework for gaining a better understanding

Consortium Type
Defines the broad goals and objectives of a consortium. The outcomes of each type dramatically influence the direction of the business model. There are three primary types: exploratory, advisory, and economic.

Architecture
Defines the major technical decisions about ledger, consensus, business rules, smart contracts, data management, among other aspects. These architecture choices will determine how security and governance will be implemented.

Business Model
Defines the business, economic, risk, and model for the consortium. The business model dictates the technical architecture of the consortium.

Governance
Defines the operational management, policies, and decision support needed for a consortium.
Prepare for the Ecosystem Boom

Blockchain enabled ecosystems are nearly doubling year over year.

By 2023, blockchain will support the global movement of $2 trillion of goods and services annually.

Through 2023, more than 80% of blockchain projects will be outside financial services.

Source: Gartner 2019 Blockchain Predicts
Blockchain Ecosystems Span All Industries

**Manufacturing**
- Asset tracking*
- Real-time auction for supplier contracts*
- Supply chain transparency*
- Dynamic commodities pricing*

**Retail**
- Loyalty tracking
- Product provenance*
- Logistics management*
- Digital rewards
- P2P selling
- Ticket purchases

**Insurance**
- Claims management*
- MBS/Property payments
- Fraud detection*
- Automated underwriting*
- Risk visualizations

**Banking and Capital Markets**
- Audit compliance
- Bond issuance
- Trade finance*
- Loan syndication
- Post trade settlement*
- Global payments*
- Derivatives trading*
- KYC/AML*

**Government**
- Licensing and ID
- Benefits distribution
- Aid tracking
- Military security
- Copyrights

**Health**
- Personalized medicine
- Records sharing
- Compliance
- Agricultural authentication
- Pharmaceutical purity

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**Asset Transfer Provenance**

**Cross-Organizational Workflow**

**High Assurance Audit**
Three Recommendations

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Being Deliberate Means Starting with Why

1. **Strategy.** Identifies the “why”
   1. Vision and principles
   2. Value model
   3. Future vision and roadmap

2. **Business model.** Defines the “what”
   1. Governing entity definition
   2. Ecosystem business capabilities
   3. Legal model
   4. Ecosystem participatory model
   5. Risk and financial model

3. **Operating model.** Illustrates the “how”
   1. Resourcing
   2. Architecture
   3. Governance
   4. Information architecture
Ecosystem Strategy can Take Many Forms

**Blockchain Disruptor**
New businesses that rely on a blockchain foundation. Business model may not be new.

- **Prediction Market**: GNOSIS
- **Content**: synereo
- **E-Commerce**: OpenBazaar

**Digital Asset Market**
New markets based on digital assets formed from nondigital ones (physical and virtual).

- **Advertising Contracts**: NYIAx
- **Digital Gold**: The Royal Mint
- **Carbon Credits**: Energy Blockchain Labs

**Efficiency Play**
Efficiency improvements in transactions, interactions and tracking provenance of assets.

- **Supply Chain**: Walmart
- **Container Shipment**: MAERSK Line
- **Clearing and Settlement**: DTCC

**Record Keeper**
Records management by one entity, for self or for a community.

- **Digital Identity**: Republic of Estonia
- **Shareholder Lists**: Republic of Estonia
- **Land Titles**: Republic of Estonia

**New Business Models**
(New Revenue Channels & Growth in Existing Business Models)

**Current Business Models**
(Cost Savings)
## Blockchain Value Framework

### Key Dimensions

<table>
<thead>
<tr>
<th></th>
<th>Improving profitability and quality</th>
<th>Increasing transparency among parties</th>
<th>Reinventing products and processes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Automation</strong></td>
<td>Self-validating network + smart contracts enable auto execution of business rules.</td>
<td></td>
<td>DAX (Decentralized Autonomous x) Transparent, predefined rules mean new ventures may be created, providing autonomous products/services through decentralized model.</td>
</tr>
<tr>
<td><strong>Control</strong></td>
<td>Control at the individual data element level, maximum flexibility over what data is shared and how.</td>
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<tr>
<td><strong>Distributed</strong></td>
<td>No single-entity data ownership, consensus applied to transactions and shared access with no central point of failure.</td>
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<tr>
<td><strong>Full traceability</strong></td>
<td>Provenance and complete history of all new data added is known.</td>
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<tr>
<td><strong>Security</strong></td>
<td>Data can be encrypted and segregated at the data element level, while also enhancing overall data security.</td>
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<tr>
<td><strong>Holistic view</strong></td>
<td>Single source of truth - all stakeholders see the same information to which they have access.</td>
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<tr>
<td>**Speed</td>
<td>efficiency**</td>
<td>Can enable faster data transfer, streamline tasks to optimize process efficiency, particularly where intermediaries have been removed.</td>
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<tr>
<td><strong>Evidence tampering</strong></td>
<td>Underlying mathematics and cryptography allow users with appropriate access to verify data has not been altered.</td>
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</tbody>
</table>

### Capabilities

- **Speed | efficiency**
- **Full traceability**
- **Evidence tampering**
- **Security**
- **Holistic view**
- **Automation**
- **Control**
- **Distributed**

### Value Drivers

<table>
<thead>
<tr>
<th>Auditability</th>
<th>Compliance</th>
<th>Data management</th>
<th>Data security</th>
<th>Data sharing</th>
<th>Resiliency</th>
<th>Authentication</th>
<th>Identity management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership</td>
<td>Payments</td>
<td>Process automation</td>
<td>Reconciliation</td>
<td>Transparency</td>
<td>Trust</td>
<td>Marketplace creation</td>
<td>New</td>
</tr>
<tr>
<td>Standardization</td>
<td>Track and trace</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>New partnerships</td>
</tr>
<tr>
<td>Purpose</td>
<td>Founder-Led</td>
<td>Partnership-Driven</td>
<td>Industry-Driven</td>
<td>Innovation-Driven</td>
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</tr>
<tr>
<td>Purpose</td>
<td>Founder defines, architect, builds, owns, and operates the solution. Business rules, consensus, and governance is controlled by the founder.</td>
<td>Typically initiated by a founder, this is a closed ecosystem of two or more participants with clear mutual financial incentive.</td>
<td>Designed to be a non-bias consortium focused on a specific industry that capitalizes on the capability of many companies.</td>
<td>Collection of innovative companies that create cross-industry and invent new business models that provide a highly innovative business ecosystem.</td>
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<tr>
<td>Value</td>
<td>Founder has full control to reinvent an existing or new business model, control the direction of an industry, and controls the speed and agility of delivery.</td>
<td>Optimize a well understood problem that the parties are currently undertaking. Creates a joint risk and monetary structure for success.</td>
<td>Harness ideas, willingness, and motivations from companies in that industry increase the value potential of the blockchain solution.</td>
<td>Agile and nimble participants that evolve solution as the industry, technology, and customer expectations evolve.</td>
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<tr>
<td>Time to Value</td>
<td>Very High – Complexity is isolated to founder and low participant investment</td>
<td>Rapid – All parties share a common incentive</td>
<td>Moderate to slow – More parties and more governance can impede TtV.</td>
<td>Highly Variable – Many factors affect this TtV result.</td>
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<tr>
<td>Inhibitors</td>
<td>Ecosystem risks of single point of failure (founder), talent acquisition, founder business executive sponsorship and vision, well defined, and funded.</td>
<td>Increased financial investment from participants, skills and technology readiness dependency, and decision making becomes more complex</td>
<td>Governance and bureaucracy slows and introduces complexity in decision making, potential liability in IP and nonperformance. Slow innovation due to various levels of risk tolerance.</td>
<td>Highly volatile business model. Issues of IP, accountability, nonperformance, and efficient decision making.</td>
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</tr>
<tr>
<td>Architecture</td>
<td>Centralized</td>
<td>Centralized/Decentralized</td>
<td>Semi-Decentralized/Decentralized</td>
<td>Decentralized/Distributed</td>
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<tr>
<td>Examples</td>
<td><img src="image1.png" alt="Logo" /> Nasdaq <img src="image2.png" alt="Logo" /> 3M <img src="image3.png" alt="Logo" /> Interswitch</td>
<td><img src="image4.png" alt="Logo" /> MAERSK <img src="image5.png" alt="Logo" /> corda <img src="image6.png" alt="Logo" /> ACORD</td>
<td><img src="image7.png" alt="Logo" /> ConsenSys <img src="image8.png" alt="Logo" /> EY</td>
<td><img src="image9.png" alt="Logo" /> OpenBazaar <img src="image10.png" alt="Logo" /> GNOSIS</td>
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Challenge

• Microsoft and the game publishers in the Xbox business shared the problem of reconciling and recalculating royalty payments.
• The existing royalty payment method relied on spreadsheets, was expensive, and the process typically took 45 days.

Strategy

• Microsoft and EY codeveloped a blockchain solution to deliver royalty statements to XBOX game publishers faster with significant efforts reduction.
• XBOX Finance replaced paper contracts with digital smart contracts for transaction processing.

Results

• The calculation process is more transparent and exposes underlying data that can be inspected and verified with a high degree of security without wasting time on audits.
• Publishers can analyze the sales performance of a game as it happens. Accounting teams can automate accruals daily. Finance can use timely data to improve forecasting. Control testing can be performed on an entire population.

“We are developing an ecosystem within the gaming industry that connects developers and publishers to game performance. Providing near real-time access to data greatly improves the process’ effectiveness and insights that lead to a more enriching experience for the partners.”

— Tim Stuart, Chief Financial Officer of Xbox
Trade-Offs for Each Business Model

**Founder-Led**
- Producer Membership
- Consumer Membership
- Ecosystem Operations
- Strategic Decisioning

**Partnership-Driven**
- Producer Membership
- Consumer Membership
- Ecosystem Operations
- Strategic Decisioning

**Industry-Driven**
- Producer Membership
- Consumer Membership
- Ecosystem Operations
- Strategic Decisioning

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**Complexity**
- Least
- Highest

**Transparency and Openness**
- Restrictive
- Inclusive

**Time to Value**
- Fastest
- Slowest
Governance Will Be a Critical Factor
How it All Connects

**Strategy**
Overall context setting, scope, impact, and expected outcomes.

**Business Model**
The form and approach to value creation for participants.

**Governance Management Models**
Forms of governance management models that align mostly to an overarching strategy and the primary ecosystem business models.

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**Strategic Direction for Blockchain**
(Business Alignment, Digital Ambitions, Market Disruptions, Goals)

**Business Scenarios and Customers**
(Business Model, Ideal Use Cases, Participants)

- **Founder-Led**
- **Partnership-Driven**
- **Industry-Driven**

- **Benevolent Dictator Model**
- **Oligarchy**
- **Federation**
- **Meritocracy**
- **Representative Meritocracy**
- **Steering Committee**
- **Stake-o-cracy**
- **Advisory Committee**
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The Blockchain Ecosystem Journey

Getting to the Minimum Viable Ecosystem requires a broader perspective

**Strategy & Formation**
- Ideated Opportunities
- Business Vision & Strategy
- Economic Model
- Governance Model
- Roadmap

**Incubation & Implementation**
- Design and Build MVPs
- Controlled Rollouts
- Consortium Operations
- Operational Governance

**Operations & Governance**
- Consortium Optimization
- Change Management
- Bug Fixes and Enhancements
- Grow and Scale
- Launch New Capabilities
Creating a Blockchain Strategy using Microsoft’s Blockchain Strategy Playbook

Envision
- Understand Trends and Capabilities
- Ideate the Possible
- Model Ecosystem Business
- Assess Risks

Strategize
- Continuous MVE
- Finalize Governance Model
- Plan Transformation Roadmap
- Design Ecosystem
- Architect Ecosystem

Architect

Continuous MVE
Envision

Envision is comprised of two major activities that is the foundation for all future decision making by removing uncertainty from the process.

1. **Understand** the trends in the market and the unique capabilities blockchain provides.
2. **Continuous** developments of MVE pilots to prove business and technical viability.
3. **Ideate** and envision the art of the possible to identify new and unknown opportunities or refine an existing business process to maximize value using blockchain.

Strategize

Strategize defines the value stream which will future-proof the ecosystem business model and all major decision points.

4. **Rationalize** your existing business and envision the digital business strategy and ambitions
5. **Model** the ecosystem business strategy, create the business strategy, along with all the economic factors for participants.
6. **Assess** inhibitors and risks to participants and to adoption.
7. **Design** the ecosystem participant model, operating model, and business governance.

Architect

Architect designs what was envisioned and strategized through an options-based transformation roadmap and a fit-for-purpose governance model.

8. **Architect** ecosystem solution architecture.
9. **Plan** the transformation roadmap for ecosystem for controlled capability rollouts to participants.
10. **Finalize** the business, ecosystem, and technical governance models.

Iterative architecture and development of the strategic roadmap that develops rapid MVP prototypes and controlled production roll-outs.
## Example: Business Strategy and Formation Approach Timeline

### Envisioning
- **Week 1 - 3**
  - Founders Collaboration Agreement

### Strategy and Formation
- **Week 4**
  - Define & Establish Advisory Board (Formation Participants Collaboration Agreement)

- **Week 5**
  - Business Model Design

- **Week 6**
  - Economic Value Model

- **Week 7**
  - Risk Assessment Analysis

- **Week 8**
  - Change Management Planning

### Architect and Incubate
- **Week 9**
  - Participant MOU Agreement Created

- **Week 10**
  - Ecosystem Operations Agreement Definition

- **Week 11**
  - Ecosystem Operator Signed

### Delivery
- Rapidly Define and Legitimize MVE
  - Pilot Use Case

### Iterative MVE(s) Development and Validation
- Advisor Validation and Feedback

### Productionalize MVE(s) and Graduate
- Controlled Rollouts of Incubation Capabilities
Microsoft and GE Aviation Digital’s Journey
GE Aviation and Microsoft Streamlines Aviation

PwC analysis has found that efficiency gains enabled by blockchain could increase industry revenue by as much as 4%, or US$40bn, while cutting MRO costs by about 5%, or US$3.5bn.


Thank you for coming!

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