Enterprise Blockchain Business Value Framework
INTRODUCTION

Enterprises, governments, and non-governmental organizations across the world have a new, powerful tool in their hands, similar to what the internet provided when it first came into existence. Blockchain technology is providing these organizations with a golden opportunity to define a strategic vision that goes beyond incremental change—an opportunity to redesign business models across entire ecosystems, revisit how they work with vendors, customers and competitors, and design new operating models to deliver breakthrough value.

Blockchain technology is emerging as a key driver of growth. With the broader application, Gartner predicts that blockchain will generate an annual business value of over US$176 billion by 2025 and in excess of US$3.1 trillion by 2030. As a part of strategic planning, enterprises are evaluating industry-specific blockchain use cases including track & trace, real-time visibility, compliance simplification, digital identity, dispute resolution, reducing intermediaries, and secure data sharing. While evaluating use cases, enterprises are still lacking tools to answer the most common questions – what is the business value of the blockchain use case? What would be the short, medium, and long-term value of implementing blockchain use cases?

“A comprehensive approach to articulate the business value derived from blockchain

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ENTERPRISE BLOCKCHAIN BUSINESS VALUE FRAMEWORK

Chainyard’s framework aims to help organizations identify the business value that blockchain technology is enabling in their use-cases for stakeholders in the ecosystem. Understanding the value for all stakeholders along the roadmap of the use case makes it easier for organizations to map the value of the investment to the roadmap that is enabled by a blockchain investment.

Chainyard’s “Enterprise Blockchain Business Value Framework” provides a comprehensive approach for articulating business value.
FOUNDATION LAYER

Permissioned access to consistent data through an immutable ledger

Blockchain’s most fundamental value – trust on the data, lies in the foundation layer. It is the immutable ledger of trusted and consistent data it holds and makes it accessible to permissioned members within the network. It allows all parties to have trust in the provenance of data, control over what data is shared, see the same data, and securely manage access to the data.

Value Lever:
The major value of the foundation layer is cost reduction by providing trusted consistent data to all parties in the ecosystem. The single ledger of trusted data eliminates disputes, improves visibility, and reduces fraud.

In another example, IBM’s blockchain solution for Contract Labor management eliminates nearly 100% of the disputes in invoice processing.

Operational Lever:
At the heart of the operational levers is the creation of new industry blockchain ecosystems, where participants work together.

Initially, one can start with a smaller ecosystem with a manageable number of stakeholders. Then build simple use cases based on integrating and sharing of data that benefits all stakeholders in the ecosystem.

In healthcare alone, approximately $455 billion out of the $7.35 trillion spent annually worldwide is lost each year to fraud and corruption, which can be drastically reduced with mutually beneficial blockchain solutions.

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Source: NCBI
A good design will ensure the appropriate privacy of shared data among the participants. The benefits can lead to participants influencing their peers to join the network and thus further increase the value of the network.

Over time, data can be automatically captured and integrated into the blockchain using IoT or APIs event data.

**Sample Business Patterns:**
- **Dispute Resolution**, **Real time Visibility**, **Track and Trace**, and **Compliance Simplification** are good examples of business patterns where this foundation layer adds value. Each of these business patterns enables more efficient, safer and smarter ways for the stakeholders in an ecosystem to work together.

**IBM Food Trust** is a successful real-world example. It provides real-time visibility by connecting participants across the food supply through a permissioned, permanent, and shared record of food ecosystem data. The industry acknowledges that the solution increases food safety and addresses recall inefficiencies.
TRANSFORMATION LAYER

Smart contract-based compliance of business rules without third-party intervention

While the foundation layer ensures trust of the data, the transformation layer primarily ensures trust of the logic by using smart contracts – a computer protocol supported by many blockchain platforms intended to digitally facilitate, verify, and enforce the business rules without third-party intermediation. The nature of distributed networks ensures that smart contracts are guaranteed to be self-executed with the results stored in the blockchain as auditable and irreversible transactions. The automation capabilities of the blockchain, that is to automatically execute business logic when certain events occur, increase the efficiency, speed and, confidence in the process leading to less friction in business. The Transformation Layer enables more use cases like digital identity, tokenization, payments, settlements, and process simplification that work as a foundation for creating new business transactions in a more transparent, faster, and secure manner.

Value Lever:
The primary value lever of the transformation layer is cost savings due to service efficiency and agility improvements. As an example, in the airline insurance industry, blockchain can be used to create smart contracts between policyholders and insurers. Based on flight delay information, blockchain can verify and process claims automatically, leading to faster and more efficient claims processing.

A recent study estimated that blockchain based transformation for investment banking could bring cost savings of:

- 70% on central finance reporting
- 50% on business operations
- 30–50% on compliance
- 50% on centralized operations
Smart contracts, together with tokenization, significantly reduce settlement time and improve the efficiency of numerous administrative processes, such as profit sharing, buy-backs, and loyalty points management.

**Operational Lever:**
Depending on the industry, the transformation layer offers many levers to improve efficiency and agility. Some of them are architecture simplification, process transformation, and asset tokenization. As an example, in the investment banking industry, business operations such as clearance and settlement processing are automated thereby increasing efficiency and eliminating the need for reconciliation. Similarly, asset tokenization, where assets are converted into a digital token that is managed on the blockchain improves operations and opens the door for new business models.

**Sample Business Patterns:**
Auditing & Reporting, Asset Tokenization Payments, Process Simplification (e-KYC) and Clearance & Settlement (IBM World Wire) are good examples.
INNOVATION LAYER

Innovative process and business model transformation

The very first application of blockchain - Bitcoin, stunned the world with innovation, as did e-mail at the beginning of the internet era. While email uses the internet as the underlying technology, Bitcoin uses blockchain.

- While email removed intermediaries for information exchange, Bitcoin removed the intermediaries for money exchange.
- While email lowered the cost of information exchange, Bitcoin lowered the cost of money exchange.

During the internet era, we saw millions of enterprise applications built on top of the internet and similarly, now we are seeing innovations being built on top of blockchain.

A blockchain business model is decentralized, has immutable data & logic, leverages peer-to-peer transactions, and fosters a trusted ecosystem. These characteristics enable the innovation layer, creating the opportunity for enterprises to establish new business models and revenue channels. Today, enterprises have opportunities to participate in blockchain ecosystems where innovation is taking place. These enterprises can help lead existing consortiums, help found new consortiums, or join existing consortiums that support relevant use cases for their businesses.

A Word Economic Forum report estimated that 10% of total GDP to be stored on blockchain by 2027.
**Value Lever:**
The primary value of the innovation layer is to create new revenue opportunities from these innovative business models. From token economies to self-sovereign identity to peer-to-peer powered disintermediation, enterprises are developing applications across all industries. Each of these unprecedented business models is opening up new ways of organizing economic activities with the potential for major disruption to the status quo. As an example, blockchain-based cross-border transactions are already disrupting traditional business models in the financial industry.

**Operational Lever:**
The operation levers start with creating a blockchain application platform to address a specific issue in the market. Once the network starts to mature, other levers such as the addition of new services, including automated reporting and new analytics/cognitive products on top of the network generate further value.

As an example, in the case of Trust Your Supplier, once the network reaches critical mass with tens of thousands of suppliers, the network may add services such as “find a supplier” or “find a buyer.” These new services lead to further opportunities and disruption to traditional markets.

The potential to license a party to run AI and data analytics on top of the trusted data of the network, ensuring data security and privacy, is another lever to drive innovation and revenue. As an example, a blockchain-based patient health record network, having a complete, curated, and trusted data set of oncology patients, can be leveraged to advance oncology research and treatment options with consent from the patients. Health analytics and prediction modeling can be improved using the comprehensive trusted blockchain data by including patient-generated data from wearables, health apps, lifestyle, environmental, and socioeconomic data while protecting the identity of the patients.

**Sample Business Patterns:**
Trade Finance, Marketplace Creation, and Data Monetization are good examples of innovative business models that can be created.
REAL WORLD EXAMPLE: Trust Your Supplier

Selective information sharing amongst partner network through a trusted digital identity

Trust Your Supplier enables suppliers to create and maintain a trusted digital identity and selectively share information with a vast network of partners. It allows suppliers to create and maintain one trusted identity, control their corporate identity, gain actionable insights, and be discovered by future clients. Buyers improve onboarding cycle time, access real-time supplier information, and facilitate trust & compliance. Third-party verifiers validate credentials and certifications, increasing trust in the data maintained within the network.

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CONCLUSION

Blockchain fuels innovation by disruption of current business practices with a focus on trust and value optimization.

Building blockchain solutions is a complex journey where experience & expertise in creating the right business model and identifying initial ecosystem partners can make the difference between a successful or failed project / product launch. Chainyard’s Enterprise Blockchain Business Value Framework provides leaders with a tool to identify the long-term business value of their use cases during early planning, helping to build the business case and ensure maximum benefits from the investment.

The advantage of Chainyard’s Enterprise Blockchain Business Value Framework is that it approaches business value as a pyramid – making it easier for organizations to develop a roadmap with known value and operational levers to realize them.
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Gigo is a recognized strategic business leader, engineering & business process consultant who has built complex software solutions from ideation to end-of-life. Prior to Chainyard, Gigo worked for Infosys, 3Com and IBM. He holds many patents in information technology. Gigo holds an undergraduate degree from NIT Calicut India, MS from DePaul University Chicago and MBA from Northern Illinois State University.

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Alex consults with leaders in the blockchain ecosystem at enterprises, technology providers, and consortiums to help them identify how to rapidly gain advantage from blockchain technology. Prior to Chainyard, he led projects focused on the adoption of emerging technologies and practices including DevOps, cloud computing, and SOA.

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Isaac has a rich leadership background in Software Engineering. He most recently served at TiVo as Senior Director of Engineering Operations and Services working in the Advanced Search & Recommendations Business Unit. Isaac came to TiVo via an acquisition of Digitalsmiths by TiVo.
We turn blockchain into business results.

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