



Global Standards Mapping Initiative

Overview of Key Insights

Background and Overview

The Global Standards Mapping Initiative (GSMI) is a joint effort led by the Global Blockchain Business Council (GBBC) and the World Economic Forum. Collaborators include Accenture; Digital Currency Initiative, MIT Media Lab; ESG Intelligence; Global Digital Finance (GDF); Hyperledger, The Linux Foundation; ING; the Milken Institute; SIX Digital Exchange (SDX); and other global entities.

This group has sought to map and assess the current blockchain and digital asset landscape in three distinct areas:

1. Technical standards
2. Legislation and guidance released by sovereign and international bodies
3. Industry best practices and standards

In total, the GSMI catalogues outputs from over 30 technical standard-setting entities, 185 jurisdictions and almost 400 industry groups to assess the current landscape and evaluate where there may be gaps, overlaps, inconsistencies and conflicts. The reports synthesize key trends and provide action-oriented guidance for public- and private-sector actors.

The GSMI reports and resources, including an interactive map of blockchain and digital asset legislation and guidance, are accessible to anyone and are intended to serve as a resource for the blockchain community and beyond as we look to develop thoughtful frameworks and standards to propel the industry forward. The GSMI reports and resources will continue to evolve and develop beyond this initial release.

Key themes and insights

Technical standards

Analysis of technical standards found a high volume of activity related to:

- **Security** – Standards for data access, integrity and storage; adaptations to traditional IT security processes and procedures for distributed ledger distributed ledger technology- (DLT) specific requirements, etc.
- **Internet of things (IoT)** – Data management for connected device; use and exchange of data; role of DLT in smart cities.
- **Identity** – Use of personal information; decentralized identification methods; key generation, storage, and management; interaction with regulation such as Anti-Money Laundering/Know Your Customer (AML/KYC).

- **DLT requirements** – Functional requirements including software and hardware components, operational procedures; governance models; data formats; risk controls.
- **DLT taxonomy/terminology** – Standardized definitions and reference architectures; defining types, functions, components and use cases of blockchain.

Additional key insights:

- **Terminology** – Clear and consistent definitions remain a challenge, with variations among standard-setting entities.
- **Volume of activity** – The number of initiatives reflects the hype surrounding the technology, meaning that some initiatives have dropped off or have not been published.
- **Scope of blockchain standards** – Division of the technical stack varies among entities, blurring the lines with related components of DLT (like cryptography) and industry verticals.
- **Gaps and overlaps** – There are several areas of overlap that are not necessarily aligned and some gaps that have not been given proper attention.
- **Standards dissemination** – The best model for deciding standards implementation remains to be seen, particularly as DLT introduces new models for governance.
- **Representation in efforts** – Representation of geographies, areas of expertise, consumers and interests varies among entities, but is important for creating inclusive and operationalizable standards.

Regulation and guidance

Analysis of our sample revealed an assortment of themes throughout the 185 jurisdictions examined, including:

- **Consumer protection** – Warnings issued to consumers, investors and businesses concerning digital assets.
- **Financial surveillance (AML/KYC and counter-terrorist financing)** – Laws, guidance and regulations established by sovereign bodies to ensure the legality of transactions conducted with digital assets.
- **Securities and commodities regulation (including initial coin offerings (ICOs))** – Regulatory and legislative tools used by governments to respond to the emergence of blockchain, digital assets and ICOs.
- **Taxation** – Tax issues related to the use of digital assets, including trading and mining.

- **Central bank digital currency (CBDC)** – Digital currencies issued by central banks; CBDCs are not necessarily blockchain-based.
- **Banking** – Regulations on banks interacting with digital assets and digital asset businesses, as well as pilot projects in the banking sector.
- **Ban on cryptocurrencies** – Jurisdictions that have taken measures to ban cryptocurrencies.
- **Sovereign strategies** – Strategies implemented by jurisdictions to develop blockchain nationally or regionally.
- **Regulatory sandboxes** – Frameworks implemented by regulators that allow financial technology firms and other businesses to conduct live experiments in a controlled environment and under a regulator's supervision.
- **Government projects/government services** – Uses of blockchain either for internal government use or government service delivery.
- **Clarity and collaboration** – As global actors construct new solutions to address society's toughest challenges, shared standards are needed to facilitate responsible innovation. There are gaps and overlaps in the current landscape of blockchain and DLT-related standards. This may be alleviated through increased cross-entity collaborations.
- **Premature standards** – There may be aspects of DLT that are not yet mature enough for standardization. Moving towards standardization too early may stifle innovation or lead to skewed or adverse incentives. As such, the time frame in which standards are developed is critical. It is important to carefully scope out what these aspects might be and identify a projected timeline for revisiting the topics.
- **Dynamic Guidance** – Much existing regulation and standardization focuses specifically on digital assets, as opposed to blockchain or DLT technology. As new uses for the technology emerge, dynamic or principles-based guidance will be better suited to adapt. Regulators should take advantage of regulatory sandboxes and innovation hubs to create more effective regulations.
- **Language and terminology** – There is still debate about key terminology and technical design choices within the DLT ecosystem. It is important to ensure that standards reflect their intended audience and intentions as clearly as possible. For example, identifying the relevant layer in the technology stack or, where appropriate, which protocol(s) or vertical(s) are being addressed in a particular standardization effort.
- **Organizational strategies and planning** – Organizations should proactively scope out their strategies for their involvement in standards creation, whether through ecosystem collaboration or independently, and work out how they will be implemented.

Key takeaways & recommendations

- **Education** – Relevant standards have the potential to shape the future of the technology. It is critical for regulators to understand the attributes of this new technology to treat it thoughtfully. The effectiveness of standards will ultimately come down to how well the technology is understood.
- **Fragmentation and information silos** – The fragmentation of approaches, worldwide and within certain jurisdictions, is indisputable and unsurprising. Existing efforts to coordinate among jurisdictions have been piecemeal at best and chaotic at worst. Much existing fragmentation adds unnecessary confusion and complexity. Breaking through traditionally siloed bodies of information, industries and geographic barriers will facilitate more functional frameworks.

Next Steps

These reports are intended to serve as a resource for the blockchain community and beyond, assessing the current landscape and evaluating where there may be gaps, overlaps, inconsistencies and conflicts. We welcome feedback, additional contributions and partnership as we build upon the reports and update the datasets.

