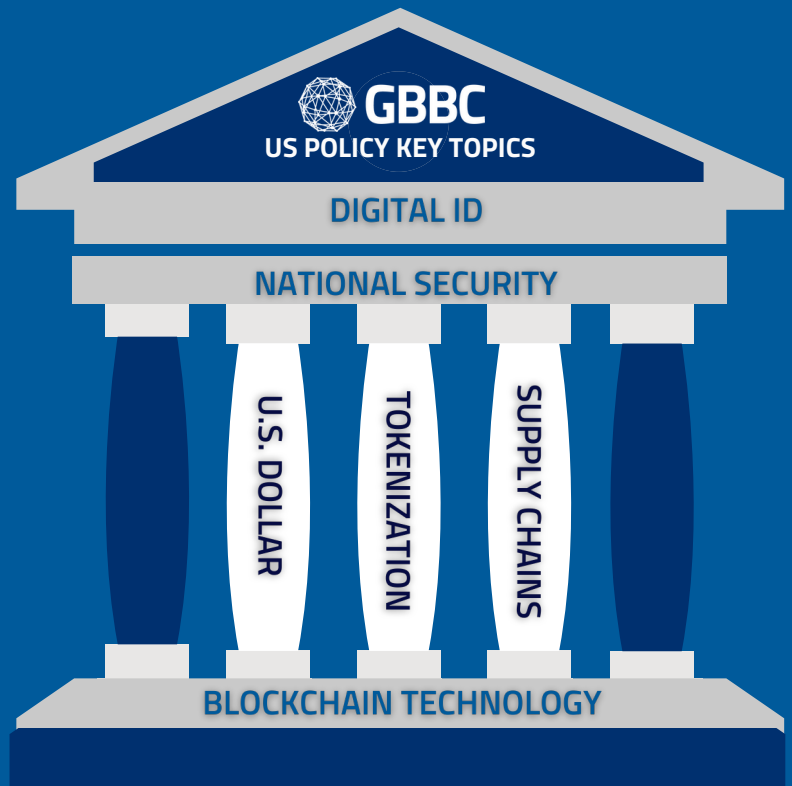




GBBC
Global Blockchain
Business Council

BRINGING BLOCKCHAIN HOME

REAL-WORLD USE CASES



Global Blockchain
Business Council (GBBC)



@GBBCouncil



GBBCouncil.org

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REAL-WORLD USE CASES



DIGITAL IDENTITY



WHY DO WE NEED IT?

PROBLEM

- Over 1 billion people lack proper identification globally ¹
- Digital and decentralized networks need adequate identity controls
- 2.8 million identity fraud reports in 2021 ²



SOLUTION

DECENTRALIZED, DIGITAL IDENTITY

For institutions:

- Enhance security and KYC/AML compliance to ensure secure digital systems
- Enable Decentralized Public Key Infrastructure (DPKI) to safeguard privacy while making data available as necessary

For individuals:

- Self-sovereign identity, an identity system architecture based on the core principle that identify owners have the right to permanently control one or more identifiers together ³

EXAMPLES

USE CASES FOR GOVERNMENT

Governments have started researching and developing decentralized identity initiatives

Online identities could unlock 6% of GDP in emerging countries ³



Province of Ontario's Digital ID Plan
Pan Canadian Trust Framework



EU General Data Protection Regulation (GDPR)
Proposal for New E.U. ID



UK Framework Solution



India's Digital ID (Aadhaar)
Digital IDs to Land
Family Digital ID



Estonia Global ID Solution

WHAT ABOUT THE U.S.?

California DMV is developing a set of smart contracts on a public blockchain to solve trusted vehicle transfers, reduce economic costs, and avoid repeated verification steps for customers and public service entities.



FINANCIAL SERVICES

- Access to a global financial network for efficient, direct, and low-cost value exchange
- Enhanced compliance with online services that require proof of identification
- Increased privacy where users can protect anonymity of holdings

INTERNATIONAL BODIES EXPLORING SOLUTIONS

Bank for International Settlements (BIS)

Organization for Economic Co-operation and Development (OECD)

International Organization of Securities Commissions (IOSCO)

Financial Action Taskforce (FATF)

HEALTHCARE & TRADE

- Know Your Object (KYO) to track an item or cargo from origin to destination as another form of identity
- Electronic healthcare records accessible to users regardless of location or insurance provider



¹ GBBC GSMI 2.0 Report (November 2021)

² U.S. Federal Trade Commission (February 2022)

³ "Self-sovereign identity: the future of personal data ownership?" World Economic Forum (August 2021)

* View Taxonomy from GSMI



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REAL-WORLD USE CASES



NATIONAL SECURITY



DANGERS IN A DIGITAL DATA WORLD

PROBLEM

The world is digitizing everything, and secure data is the key

\$457 MILLION¹

extorted from victims via
ransomware in 2022

83%²

organizations globally had
more than one data breach

\$4.3 MILLION²

average total cost of a
data breach in 2022

Governments are not immune to this problem²

\$2.1 MILLION

average total cost of a **data breach**
in the **public sector** in 2022



The United States was ranked
highest in cost of data breaches
for the **12th year in a row**

CYBERSECURITY

SOLUTIONS

BLOCKCHAIN-BASED TOOLS



Digital ID enhances
AML/KYC compliance and
can establish streamlined
access to services



Tokenization enables the
ability to digitize an asset



Supply chains strengthened
by transparency and ability
to detect counterfeit goods

FOLLOW THE MONEY³

Blockchains' immutable ledgers
provide traceable transactions that
can be analyzed to determine illicit
activities

- Real-time updates with transactions
- Collect and monitor potential evidence
- Real-time updates
- Tracing funds to off-ramps
- Supporting seizures
- Identifying criminals

¹ "Crypto Crime Report 2023" Chainalysis.

² "Cost of a Data Breach" IBM (2022).

³ "Key considerations for law enforcement handling blockchain & cryptocurrency data" TRM Labs (February 2023).



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REAL-WORLD USE CASES



U.S. DOLLAR



FOREIGN EXCHANGE MARKETS ¹

DAILY TURNOVER

Average Daily Turnover in April 2022

\$7.5T

USD = 88.5% GBP = 12.9%
EUR = 30.5% CNY = 7.0%
JPY = 16.7%

DAILY SPOT

\$3.3T

DAILY FX SWAPS

\$2.2T

USD LEG REPRESENTS 87% OF CROSS-BORDER TRANSACTIONS

WHAT IS THE ROLE OF US\$ IN A DIGITAL MONEY WORLD?

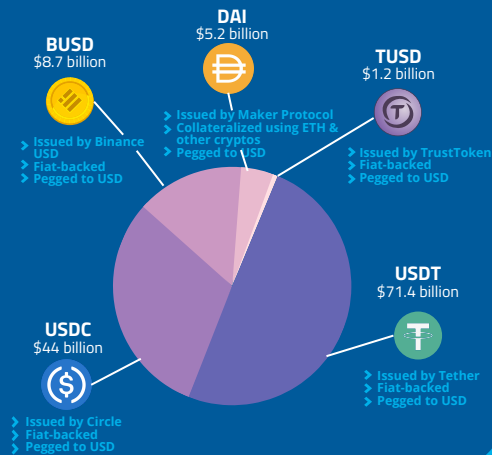
STABLECOINS ²

A crypto asset that aims to maintain a stable value relative to a specified asset, or a pool or basket of assets

TOP STABLECOINS BY MARKET CAP

USDC ³ SPOTLIGHT

1.6M Number of holders
\$4B 24HR trading volume
9.6T Total on-chain transactions
190+ Number of countries supporting



CBDCs

A digital payment instrument and store of value issued by and is a liability of a jurisdiction's central bank or other monetary authority

- **Complement current forms of money** and methods for providing financial services
- **Enhancing demand for U.S. dollar** through greater efficiency of fund flows at lower costs
- **Protect U.S. status** as the world's reserve currency

RESEARCH

- [Atlantic Council CBDC Tracker](#)
- [The Digital Dollar Project](#)
- [WEF Digital Currency Governance Report](#)

ALTERNATIVES: CRYPTOCURRENCIES

A crypto asset that is a digital representation of value with no redeeming rights against a central party

TOP COUNTRIES FOR GLOBAL ADOPTION ⁴



\$1 TRILLION market capitalization

300 million users ²

¹ "BIS Triennial Central Bank Survey" (2022).

² <https://coinmarketcap.com/charts/> (March 2023)

³ "USD Coin (USDC) | Circle" (March 2023)

⁴ 2022 Global Cryptocurrency Adoption Index - Chainalysis

* View Taxonomy from GSML



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REAL-WORLD USE CASES



TOKENIZATION



WHY TOKENIZATION?

BENEFITS ¹

Tokenization is the digital representation of rights and obligations

- **Transparency and automation** leading to reduced costs
- **Reduction of risks** due to programmable compliance
- **Improved accountability** through measurement, reporting, and verification frameworks
- **Potential to fractionalize assets** such as verified CO2 tons (carbon credits)

EXAMPLES

DIGITAL BONDS ²

Functions similar to traditional bonds, can have automated lifecycles, reduce settlement times, transaction fees, and increase transparency



CARBON CREDITS ¹

Blockchain-based carbon credits enable price transparency, reduce double-spending, allow for accurate accounting of carbon emissions and offsets, and improve effectiveness of voluntary carbon markets



TOKENIZATION STANDARDS



InterWork Alliance

A Global Blockchain Business Council Initiative

Empowers organizations to adopt and use token-powered services in their day-to-day operations across use cases and networks, bringing inclusivity to globally distributed applications

TOKEN TAXONOMY FRAMEWORK

The basic structure that enables multiple parties to define a standard with a common language, behaviors, and properties for the exchange of value using **tokenization**

LEARN MORE ABOUT TTF [HERE](#)

USE CASES



Digital Measurement, Reporting, and Verification (MRV) Framework



Hedera's Token Service

20+ implementations of TTF

APPLYING TOKENIZATION

INTEROPERABILITY ³

- Platform neutral
- Formula used to generate business functionality
- Behaves in a strictly deterministic way

VOLUNTARY ECOLOGICAL MARKETS ¹

- Blueprints to help companies build ecosystems that support tokenized environmental assets and interoperability
- Guidance and special considerations for workflows
- Overview of the buy-side and sell-side of environmental markets and how tokenization fits into existing markets

READ THE REPORT [HERE](#)

¹ "Voluntary Ecological Markets (VEM) Version 2"

² "Digitizing Bonds on the Blockchain"

³ "The First Digital Bond Issued In A Regulated Market By The Swiss Exchange Points To A Need For Standards" * View Taxonomy from GSMI



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REAL-WORLD USE CASES



SUPPLY CHAINS



BLOCKCHAIN IN SUPPLY CHAINS

1 DISTRIBUTED LEDGERS

By using a distributed ledger for supply chain processes

- Every party can access the data and authorize who can alter it
- Transaction details are immutably stored
- Secure supply chains can be established through hashing properties

1 SMART CONTRACTS

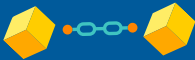


A self-executing program that defines and enforces a set of conditions amongst parties, without the need for an intermediary

Smart contracts **remove the need** for intermediaries and **streamline processes**

APPLICATIONS

2 LONG TERM BENEFITS



Reduce Costs, Fewer Intermediaries

Reduce Waste and Delays

Increase Trust

Faster Processing of Transactions

Reduce Compliance Violations

Detect Counterfeit Goods

Track and Trace Products

2 USE CASES

EXAMPLES OF TRACEABLE PRODUCTS

- Pharmaceuticals
- Food
- Medical supplies
- Electronics
- Original Equipment Manufacturing (OEM) parts



Circular

Use of lithium battery traceability from producer to retailer



HYPERLEDGER FOUNDATION

GSDN's global trade operating platform



CRITICAL MINERALS ASSOCIATION

Use of transparent process for the security of supply and extraction for acquiring mineral rights



1 fnbo

Researching how to implement blockchain in 'CattleID' app

1 "Could Blockchain Revolutionize Parcel Shipping?"

2 "A Systematic Literature Review of Blockchain-Enabled Supply Chain Traceability Implementations"




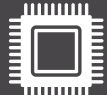

* View Taxonomy from GSI



WHAT IS *WEB3*?







The 3rd generation of the Internet, based on decentralized networks and enabled through the use of emerging technologies including blockchain, tokenization, AI, metaverse, and more*

WEB3 TECH STACK

-  dApps Browsers
-  Decentralized Applications (dApps)
- 
 - Storage
 - Messaging
 - Consensus
 - Data feed
 - Internet-of-Things (IoT)
 - Wallets
 - Off-chain computing
 - Digital assets
-  Hardware Clients
-  Internet Protocol

INTERNET EVOLUTION

1

- 1990s**
 -  **WEB 1**
 - 
 - **Read-only** resource
 - Primarily used to **find information**, functioning like a digital encyclopedia
 - **Few monetization** methods, users typically consumed while service providers created
- 2000s**
 -  **WEB 2**
 - 
 - Offers **social connectivity, messaging, creator tools, and more**
 - **Centralized**
 - **Personal information** including identity, social engagement, financial information, etc. **collected and controlled** by online service providers
- Now**
 -  **WEB 3**
 - 
 - Enables **authentication** of credentials for a user's asset or data
 - **Automation** of transactions
 - Enhanced **security** and **privacy** through the use of emerging tech

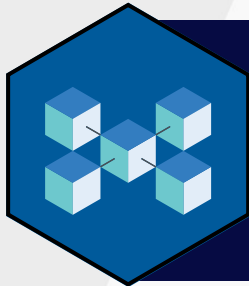
BENEFITS

-  **Interoperability** across platforms and networks
-  **Authentication** of credentials and data ownership
-  **Activities secured** through encryption and decentralization
-  **New financial opportunities** not always available in Web2

1 "How will Web3 and the metaverse create opportunities?" (EY)

* This definition embraces the technologies that currently contribute to Web3, but this may continue to evolve.

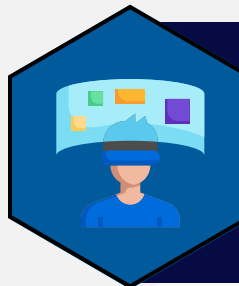
EMERGING TECHNOLOGIES OF *WEB3*



BLOCKCHAIN

- Real-time authentication and traceability
- Decentralized platform that removes intermediaries

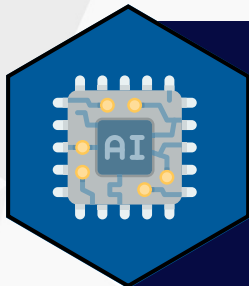
1



METaverse

- Future way to experience the Internet, through the use of augmented and virtual reality
- New form of commerce and business

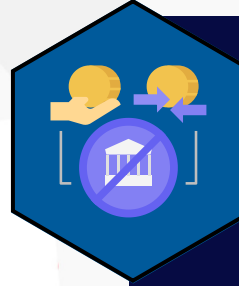
1



ARTIFICIAL INTELLIGENCE (AI)

- Enhanced transaction monitoring across platforms
- Optical character recognition (OCR)
- Sophisticated data analytics

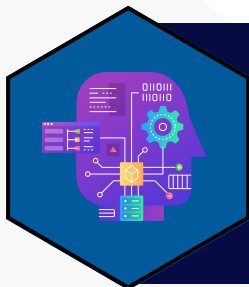
2



DECENTRALIZED FINANCE (DeFi)

- Financial services that build on top of the decentralized foundations
- Peer-to-peer transactions enabling individuals' control over assets

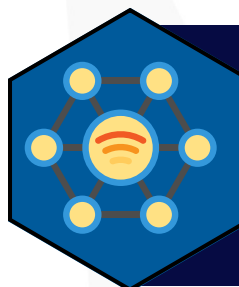
1



MACHINE LEARNING

- Business intelligence
- Fraud detection
- Automatic helplines
- Medical imaging and diagnostics

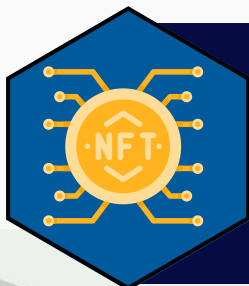
3



INTERNET-OF-THINGS (IoT)

- Automation and connectivity
- Smart recognitions, tracing, monitoring, and administration
- Smart homes and cities

2



NON-FUNGIBLE TOKENS (NFTs)

- Unique and encrypted tokenized asset
- Used to record original work and ownership

2



GAMEFI

- Game launchpads
- Play-to-earn (P2E) models
- In-game marketplaces with NFTs and cryptoassets

4



DECENTRALIZED AUTONOMOUS ORGANIZATIONS (DAOs)

- Next-gen governance
- Community-driven
- Use of smart contracts and DAO tokens

2

REAL WORLD USE CASES OF WEB3

BANKING AND FINANCE



HesabPay enables digital payments and relief funding in Afghanistan



Bakong, launched with central bank, processes over \$8.5 billion in transactions across 41 financial institutions

Digital Asset

Deutsche Börse's D7 enables same-day issuance and straight-through processing



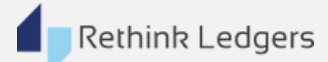
Tel Aviv Stock Exchange "Eden" is powered by VMware Blockchain for Ethereum and Fireblocks



Blockchain network and products streamline exchange of payment-related information between institutions



SDX Web3 Custody offers institutional-grade custody services with built-in security and resilience



TYDEI Health manages physician preference items (medical devices) on behalf of hospitals and ambulatory surgical centers



AVC Global delivers safe and secure pharmaceutical drug supply chain tracking and traceability

PROOF OF AUTHENTICITY



Polestar tracks cobalt, mica, lithium, and nickel on battery supply chain



A virtual city marketplace for local merchants to issue digital vouchers and build loyalty



\$NNOIR is the first 'phygital' wine (combining luxury wine with a digital token)



Brij Lok Kala Foundation (BLKF) brings an ancient art from India into the digital age



Digitizes the entire **carbon credits' life cycle** history as NFTs

BUSINESS SERVICES



Content management system that embeds security and provides an immutable audit trail



Interplanetary File System (IPFS) provides decentralized storage



Nth Floor metaverse enables businesses to utilize virtual benefits for business services



Metaverse Group offers virtual real estate development services



Dedicated crypto insurance that leverages tools, tech, and risk insights to safeguard Web3 assets

SUSTAINABILITY



EY OpsChain ESG provides a trusted platform for emissions and carbon credit traceability



Links data from on-farm fertilizer use, tributary sensors, water buoys in Lakes Michigan and Ontario, and more to **tokenized sustainability-linked loans**



Tracks greenhouse gas concentrations, fluxes, and observations from global to regional sources



Enables tracking, tracing, and trading of **renewable energy** across five continents



The largest and leading industry association for the blockchain technology and digital assets community

500+

International Members

231

Ambassadors

109

Jurisdictions & Disciplines

GLOBAL POLICY TEAM

Americas



Andrea Tinianow
CLO and Head of Policy - Americas
GBBC



Dawn Stump
Board Member & Co-Chair of Reg Forum
GDF



Jeff Bandman
Co-Chair of Reg Forum
GDF



Dina Ellis Rochkind
Government and Regulatory Affairs
Advisor - Americas
GBBC



Andrew Smith
Government and Regulatory Affairs
Director - Americas
GDF



Summer Singh
Policy and Communications
Lead - Americas
GBBC



Sandra Ro
Chief Executive Officer
GBBC

Europe, Middle East, and Africa (EMEA)



Lavan Thasarathakumar
Government and Regulatory Affairs
Director - EMEA
GDF



Dimitris Psarrakis
Board Member
GDF



Lawrence Wintermeyer
Board Chair
GDF



Emma Joyce
Chief Executive Officer
GDF



Abdul Haseeb Basit
Chief Financial Officer
GBBC



Steve Vallas
Policy Advisor, APAC
GDF



Greg Medcraft
Board Member
GDF

Asia-Pacific (APAC)

GBBC ENABLES

EDUCATION



Meetings with public-private stakeholders & connect 75+ regulators around the globe

ADVOCACY*



Digital Assets
• Codes of conduct
• Standards
• Principles

PARTNERSHIP



Global research on
• Key trends
• Legislation
• Innovative use cases



BY THE NUMBERS

GBBC DIGITAL FINANCE (GDF)



GBBC
DIGITAL
FINANCE

GBBC Digital Finance (GDF) is the financial services arm of **GBBC** that promotes the adoption of best practices for crypto and digital assets, and digital finance technologies through the development of conduct standards, in a shared engagement forum with market participants, policymakers and regulators.

10

Codes of Conduct

4

Quarterly Regulator-Only Forums

60+

Global Regulators and Agencies

10+

Standards, Best Practices and Reports

10

Working Groups

GLOBAL STANDARDS MAPPING INITIATIVE (GSMI)



GBBC GSMI 3.0

Mapped and Analyzed Data From:

Global Standards Mapping Initiative (GSMI) is a GBBC initiative that analyzes the blockchain and digital asset landscape by tracking relevant legislation, university courses, industry consortia, and technology standards around the world.

700+

University Courses

2000+

Stakeholders

180+

Definitions

210

Jurisdictions

50

Standards Bodies

RESOURCES

- [GBBC CEO Testifies at Senate Agriculture Committee](#)
- [GSMI Fact Card Series](#)
- [International Journal of Blockchain Law \(IJBL\)](#)
- [Global Standards Mapping Initiative \(GSMI\)](#)
- [Weekly Newsletter](#)
- [Annual Report](#)



For more information, contact summer.singh@gbbccouncil.org