



Risks and opportunities of emerging technologies and crypto:  
the two sides of the coin

Report DGI 2021Q4 – Live streaming

*DIGITAL GOLD INSTITUTE*

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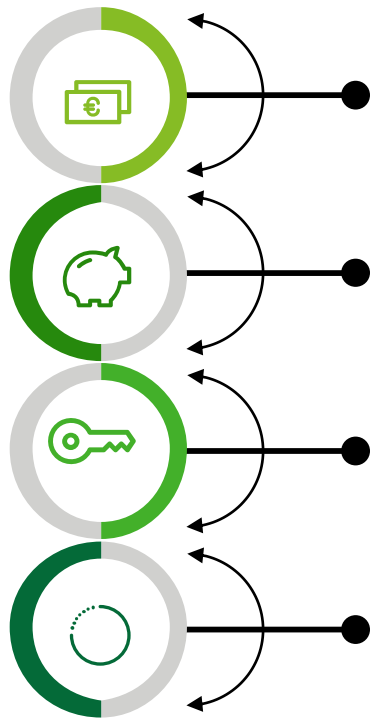
# Context

## Overview from the world



# A new age of digital assets

## From physical to digital assets - Key Highlights



The **end of physical money** as we know it represents an overdue upgrade. There is consensus among our cohorts that **digital assets will replace fiat currencies** in the next five to 10 years.

Companies, whose organizations have already deployed blockchain solutions into productions and and/or integrated digital assets into their core business activities (hereinafter «Pioneer Companies» or «Pioneers»), consider these technologies as a top five strategic priority. **Pioneers have deep convictions about the potential that blockchain and digital assets offer.**

In particular, if we focus on **crypto custody, related models can take a variety of forms**, since crypto assets are new, vary widely in design and implementation. The custody of digital assets requires a new kind of technical infrastructure as well as new processes and procedures.

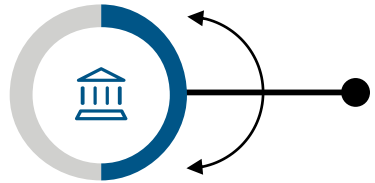
**Participation in the age of digital assets is not an option, it is inevitable.** Leaders are left only to decide how and when their organizations should start – and how to use digital assets and the new global financial service infrastructure to their greatest advantage.

Source: Deloitte's 2021 Global Blockchain Survey, which polled a sample of 1,280 senior executives and practitioners in 10 locations. Respondents had at least a general understanding of blockchain, cryptocurrencies and digital assets.



# A new age of digital assets

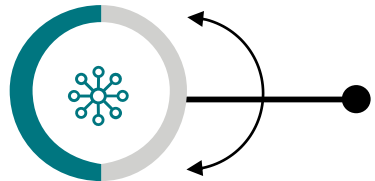
## Disruption in financial services - Key Highlights



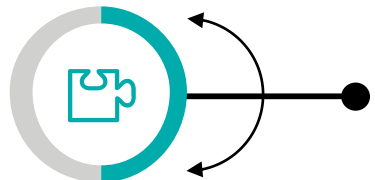
Regarding the Financial sector, today, **digital assets are disrupting the entire market.** Indeed, the rise in digital assets is affeting every organization and industry that is a customer of FSI.



With digital assets disruption rapidly fragmenting the marketplace, global financial services are striving reinventing themselves, creating businesses to replace disappearing source of revenue. **The industry has been slow to face the issue because regulatory requirements for many dimensions of digital assets are not yet mandating a response.**



This thinking creates **new level of anxiety about how the industry can adapt traditional processes, products and services to effectively meet their customer's future needs.** Banks are currently on the vanguard but in constant state of flux as capital markets realign around digital assets. **This seismic shifts will affect any organization that uses a bank in the near and long term.** The future is happening now. But, like any new thing, they **present new risk.**



However, the **leading barriers to digital assets acceptance are cybersecurity, regulations and financial infrastructure.**

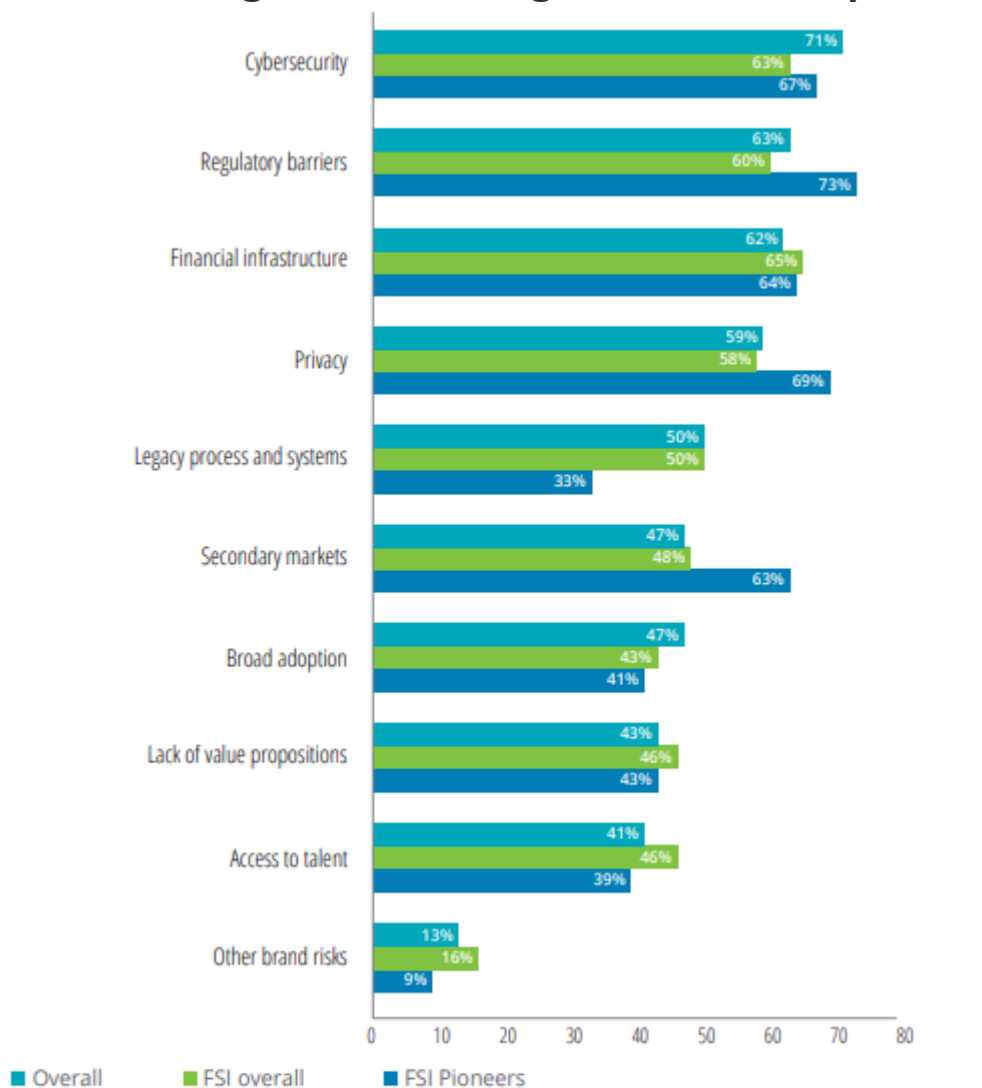


Source: Deloitte's 2021 Global Blockchain Survey, which polled a sample of 1.280 senior executives and practitioners in 10 locations. Respondents had at least a general understanding of blockchain, cryptocurrencies and digital assets.

# Blockchain and cryptocurrency – Risks and Opportunities

## Leading barriers VS Greatest Impacts – A view of the FSI sector

The leading barriers to digital assets acceptance



Where will digital assets have the greatest impact?



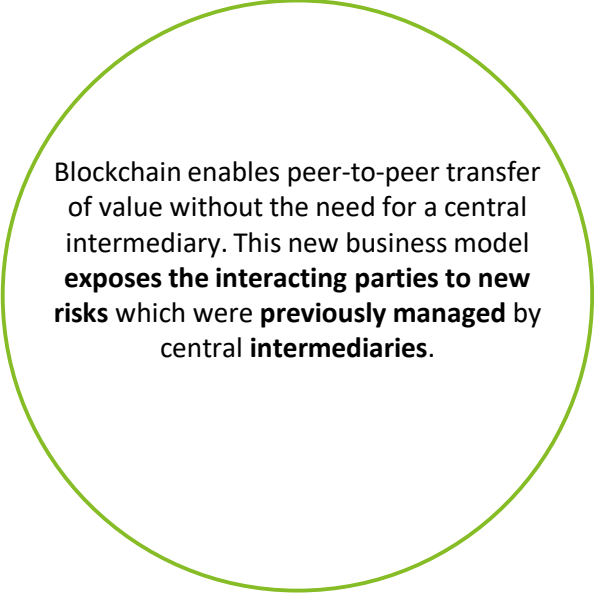
# Blockchain and cryptocurrency – Risks and Opportunities

## Risks Consideration - Standard vs value transfer

Standard risk considerations			
Strategic	Business continuity	Reputational	Information security
Regulatory	Ops and IT	Contractual	Supplier



Value transfer risk considerations	
Consensus protocol	Data confidentiality
Key management	Liquidity



# Bitcoin – Constraints and benefits

## Constraints VS Benefits



### Bitcoin Constraints

- Cultural paradigm
- Relevant legal and political implications
- Bitcoins are **easy to buy** on exchanges, but to leave them there has proved to be unsafe (multiple hacks and incident)
- If someone does not own its bitcoins' **private key**, then he does not own those bitcoins
- Bitcoin financial sovereignty: “be your own bank!” but unfortunately **bitcoin safe storage is quite technical**



### Bitcoin Benefits

- Decentralized: no central authority, no intermediaries
- Open-access: no discrimination, no amount limits, 24/7/365
- Borderless: no geographic limits
- Secure: non-falsifiable, non-repudiable transactions
- Resilient
- Cryptographic security

# Risk & Control Framework



How can we address new and emerging risks?

A support is provided by **building a robust, transparent, well-structured and well-established Internal Control System** to monitor such risks the company is or might be expose to.

## Best Practices

- European Union Agency for Cyber Security's (**ENISA**) paper on "Distributed Ledger Technology & Cybersecurity" (December 2016)
- International Organization for Standardization's (ISO) standard (**ISO22739:2020**)
- US National Institute of Standards and Technology's (**NIST**) framework (NISTIR 8301) [soon to be release]
- **COBIT 2019** (Control Objectives for Information and Related Technologies) by ISACA for information technology (IT)

## Blockchain Framework

An **illustrative inventory of public and private Blockchain risks and related controls** mapped against the trust services criteria. This document can be used in order to accelerate Blockchain readiness projects, perform completeness checks against existing Third Party reports for entities that operate in the Blockchain sector, or assist clients and project teams in the identification of risks that may exist relative to Blockchain.

**There are three types of service providers identified and considered as part of this framework:**

- 1) Wallet Providers
- 2) Currency Exchanges
- 3) Private Blockchain Services

By its nature, the Blockchain Framework is applicable to different businesses operating in the blockchain world. Thanks to its customizability, it has been adapted to **CheckSig's** needs.

# Service Organization Controls 1 and 2

## SOC 1 - When to adopt it

It is important for companies to be aware of outsourcing risks, including, but not limited, to reputational, control, compliance, privacy, financial and operational risks.

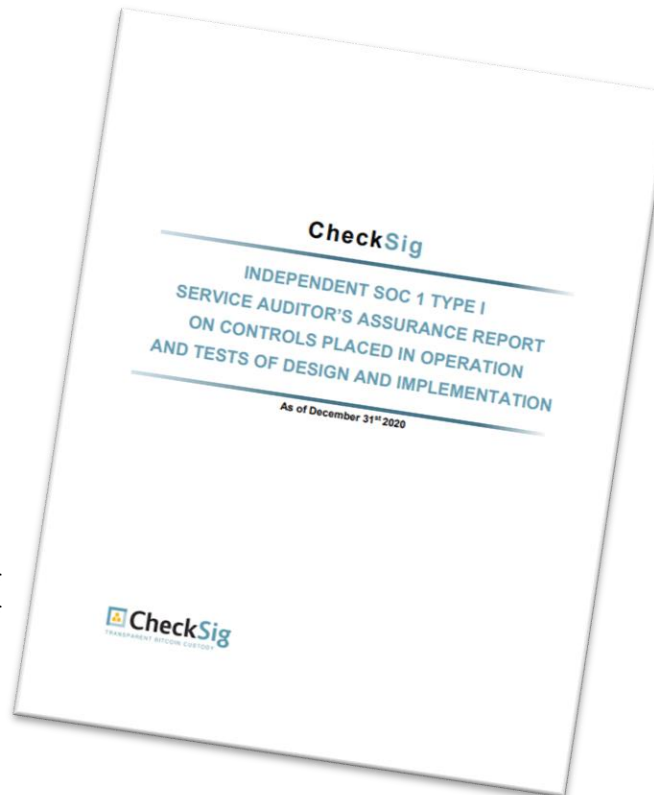
To effectively manage these risks, executives could rely on specific reports from their Service Organizations.

The purpose of such a Report is to provide clients and/or their auditors with an objective report that expresses an opinion about the control environment of a Service Organization. **The result is an independent and objective opinion about a standardized set of service objectives that are tested only once to minimize business disruption.**

## SOC 1

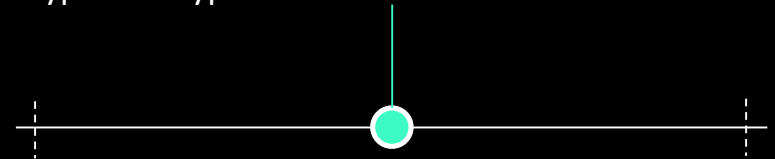
The SOC 1 report focuses on a Service Organization's controls that are likely to be relevant to an audit of a user entity's (customer's) financial statements. Control objectives are related to both business process and information technology.

Common SOC 1 are the International Standard on Assurance Engagements (ISAE3402) Report and the Statement on Standards for Attestation Engagements no. 19 (SSAE19) Report. They are the result of a collaborative effort put forth by International Federation of Accountants (IFAC) and American Institute of Certified Public Accountants (AICPA).



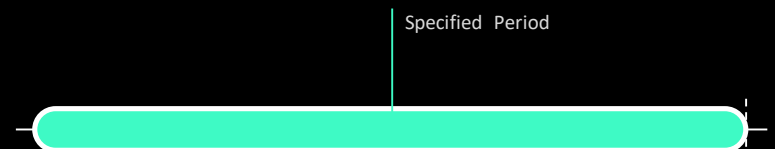
*You can outsource the service, you can't outsource the risk*

### Type I vs. Type II



Controls: Design ☒ Operating Effectiveness ☐

**Type I** audit report focuses on a description of a service organization's control and the suitability of how those **controls** are **designed** to achieve the control objectives as of a **specified dates**.



Controls: Design ☒ Operating Effectiveness ☒

**Type II** audit report contains the same opinions as a Type I, but it adds an opinion on the **operating effectiveness** to achieve related control objectives **throughout a specified period**.

# Service Organization Controls 1 and 2

## SOC 2 - When to adopt it

**SOC2 reports provide independent assurance on the state of controls at a Service Organization intended to mitigate risks related to security, availability, processing integrity, confidentiality, and/or privacy (Trust Services Categories).**

In conjunction with CheckSig we have designed a solution to provide highly secure, enterprise-grade and compliant solution for bitcoins custody.

## SOC 2

**SOC2 can be applied for regulatory or non-regulatory purposes to cover business areas outside of financial reporting.** The report can be distributed to customers and other stakeholders to demonstrate a focus on system and processing controls to meet their requirements. The need for assurance in these areas can be addressed through the following three SOC2 Trust Service Criteria (TSCs):



### Availability

Information and systems are available for operation and use to meet the entity's objectives.



### Confidentiality

Information designated as confidential is protected to meet the entity's objectives.



### Security

Information and systems are protected against unauthorized access, unauthorized disclosure of information, and damage to system that could compromise the availability, integrity, confidentiality, and privacy of information or systems and affect the entity's ability to achieve its objectives.



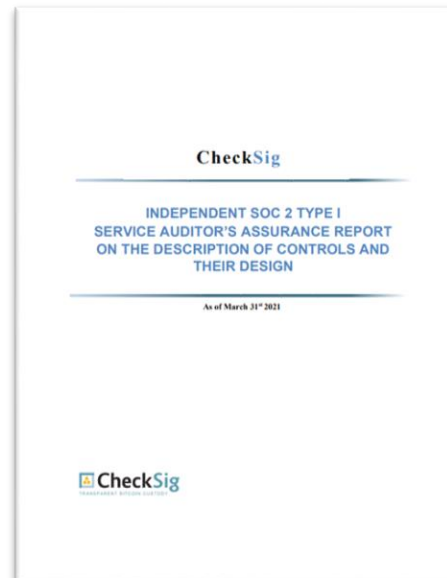
### Processing Integrity

System processing is complete, valid, accurate, timely, and authorized to meet the entity's objectives.



### Privacy

Personal information is collected, used, retained, disclosed, and disposed of to meet the entity's objectives.



*I need Trust Principles*

*Why consider SOC2 assurance?*

- ✓ Comfort to the client over security, confidentiality and integrity controls
- ✓ Help the client to address a number of regulatory requirements and risks beyond financial reporting
- ✓ Reduce the effort associated with audit visit from customer or business partner
- ✓ Comparable standard
- ✓ Consistent with multiple control framework

# Appendix 1 - Eminences – Publications and Research Papers

Deloitte.



So, You Want to Be a  
Crypto Bank?

Publicis Center for Regulatory Strategy  
April 2021

So, You Want to Be a  
Crypto Bank?

Deloitte.



Blockchain  
Inspiring an evolution  
in commerce

The future of blockchain and  
market disruptors

Deloitte.  
Insights



Deloitte's 2021 Global  
Blockchain Survey  
A new age of digital assets

Deloitte's 2021 Global  
Blockchain Survey

Deloitte.

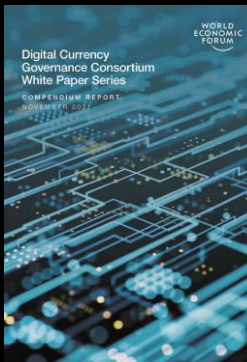


Corporates investing  
in crypto  
Corporate strategy & finance  
in digital assets

Corporates Investing in  
Crypto - 2021

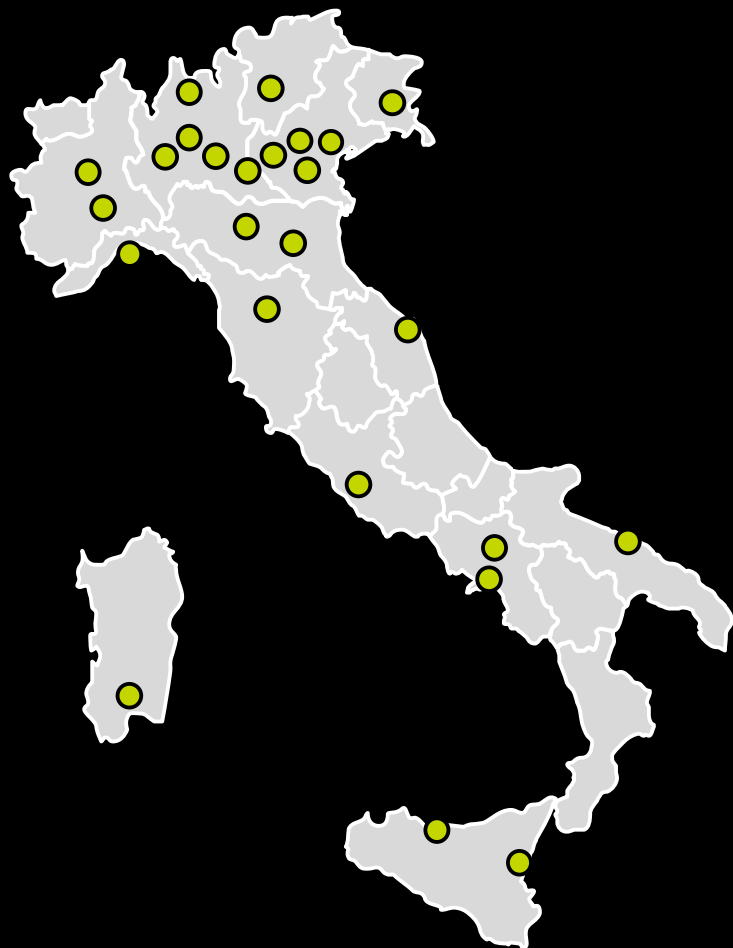


COSO Paper: Blockchain  
and Internal Control -2020



Digital Currency  
Governance  
Consortium White  
Paper Series - 2021

## Appendix 2 - Deloitte in Italy



**25**  
OFFICES



**7.400**  
CUSTOMERS



**6.000**  
PEOPLE



**43%**  
WOMEN IN TOTAL



**+16%**  
STAFF GROWTH



**51%**  
STAFF UNDER 30



**430.000**  
HOURS DEDICATED  
TO TRAINING



**22%**  
AUDIT MARKET SHARE  
FOR LISTED COMPANIES



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