W3NOW.DE
MINI REPORT

State of Blockchain Adoption in the German Economy

2024

ACKNOWLEDGMENT

Many thanks from the team of the Hanseatic Blockchain Institute!

Hanseatic Blockchain Institute
W3NOW.DE 2024

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1.1 KEY FACTS

The financial sector has a high affinity for blockchain technology

Tokenisation, payment with cryptocurrencies and DeFi shape the use of financial service providers.

Bitcoin's most important use case is personal investment

Blockchain companies increase budgets

Regulatory framework conditions hinder implementation

Technical complexity as a major hurdle for user experience

Blockchain as a catalyst for sustainable business

Smart contracts are the foundation of blockchain applications

Public-permissionless blockchain is the primary choice for companies

Great synergetic potential between blockchain and AI

Digital Identities are an important prerequisite for various industries

NFTs are most commonly used in marketing

German competitiveness can be improved in an international comparison

Shaping the Future: Demand for experimental freedom, networking, education

1.2 ABOUT W3NOW

W3NOW.DE is a project funded by the German Federal Ministry of Economic Affairs and Climate Protection (BMWK) and carried out by the Hanseatic Blockchain Institute (HBI). The aim of the project is to analyse the adoption of Web3 technology in the German economy. The results of the overall project provide a comprehensive insight into the impact of blockchain technology on financial and real economic processes in Germany. Based on this, political and economic recommendations will be formulated to support the expansion of Germany's digital sovereignty in the area of the key technology blockchain.

As part of the project, the Hanseatic Blockchain Institute first established a Germany-wide panel of Web3 users and interested companies. This Web3 panel was used for an empirical survey of the Web3 economy in cooperation with Statista. The companies in the panel answered an in-depth questionnaire. Parts of the results of this quantitative survey are subject to this report and provide initial insights into the adoption of blockchain in the German economy.

In addition to the quantitative research, the Hanseatic Blockchain Institute conducts interviews with personalities from German politics and the Web3 economy. From this qualitative research, lighthouse blockchain-projects in the German economy will be identified based on the scalability, feasibility and uniqueness of the solutions. In the coming months, these projects will be presented to support the understanding of the project's findings and the technology's impact on German economy.

About the Hanseatic Blockchain Institute

The Hanseatic Blockchain Institute (HBI) is an association dedicated to promoting research and education in the field of blockchain technology. If you would like to support projects of the Hanseatic Blockchain Institute, we would be delighted to welcome you as a member. More information on www.blockchaininstitute.eu.

1.3 INTRODUCTORY WORDS

The W3NOW-MINI report provides an overview of the potential, challenges and applications of blockchain technology in the German economy based on the data from the associated survey.

According to ISO standards, a blockchain is defined as a distributed ledger that contains confirmed blocks and is connected by organised, sequential chains with hash links. The distributed ledger is designed to be immutable, tamper-proof and tamper-resistant. It only allows new records to be added and serves as the final record of confirmed and validated transactions. [Source: International Organisation for Standardization (n.d;) ISO 22739:2024 {EN} Blockchain and distributed ledger technology   Vocabulary https://www.iso.org/obp/ui/en/#iso:std:iso:22739:ed- 2:vl:en]

 The first steps towards blockchain were taken as early as 1991. In their paper "How to Time-Stamp a Digital Document", Stuart Haber and W. Scott Stornetta discussed how the problem of time-stamping digital documents could be solved in a tamper-proof manner [Ouelle: Habert, S. & W. Scott Stornetta. (1991). How to Time-Stamp a Digital Document. Journal of Cryptology, Vol.3, No.2, p.99 lll].

However, blockchain technology only gained worldwide fame with the publication of the Bitcoin white paper. This document was written by an anonymous author or group under the pseudonym Satoshi Nakamoto. The ideas and concepts presented in the Bitcoin white paper laid the foundation for the development of blockchain-based applications and cryptocurrencies.

There are now various possible applications for blockchain technology that can go beyond financial services, such as digital identities, artificial intelligence or compliance with sustainability regulations (Environmental, Social, Governance). The following pages show which fields of application exist in the German economy and to what extent they are being utilised.

2.1 BLOCKCHAIN ADOPTION

The W3NOW survey shows a dynamic adoption landscape for blockchain technology with differentiated application areas, particularly in financial services, digital identities and marketing. While 60% of respondents can be classified as users of blockchain technology, 67% are actively developing solutions. 64% of respondents advise on the topic of blockchain.

67% - - - - - - - - -
64% - - - - - - - - -
60% - - - - - - - -

2023

How do you work with blockchain technology?

■ under development   ■ in consulting services   ■ in utilisation

Figure 1: Basis n=138

The application of blockchain technology in the financial services sector is the most advanced, indicating an established acceptance in this sector. The survey shows that both consultation and actual application of blockchain technology are most advanced in the financial sector.

However, the implementation of blockchain technology is extending beyond the financial sector, particularly in the areas of digital identities, marketing, and copyright and licensing management. This is supported by the results of the survey, where the use of blockchain technology for digital identities and marketing is particularly high at 31% and 28% respectively, compared to the other areas, illustrating the diverse application possibilities of blockchain technology.

Areas of Implementation

Consultants

Area	not planned	in discussion	under planning	applied	Consultants
Financial Services	25%	13%	8%	54%	57%
Digital Identities	26%	20%	23%	31%	35%
Marketing	46%	16%	10%	28%	43%
Copyright-& Licence Management	51%	15%	16%	18%	17%
Supply Chain Management	62%	14%	12%	12%	48%
Gaming	64%	14%	9%	13%	4%
Energy Management	78%	13%	5%	5%	30%
Management of Healthcare Data	80%	16%	3%	1%	0%
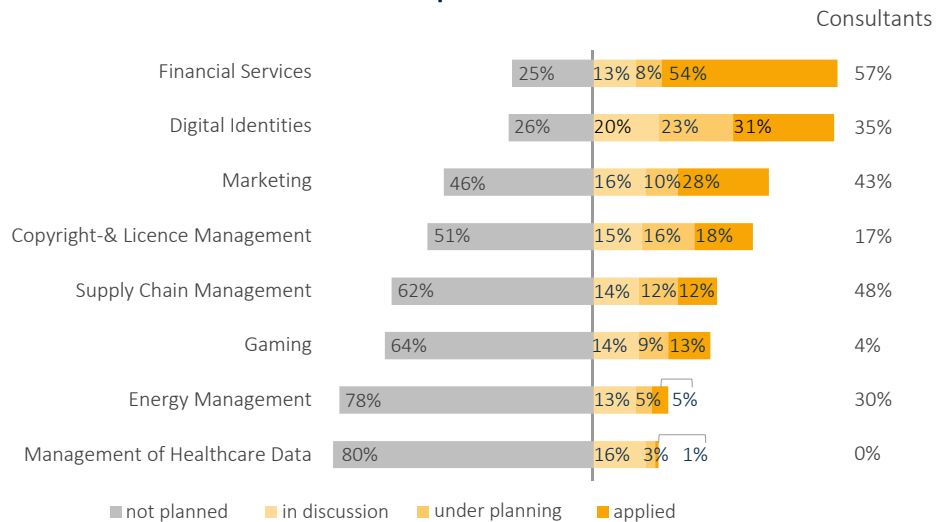
Figure 2: Basis companies=132; Basis consultants: n=23

In addition, the high consulting rate of 43% in marketing is an indicator of the growing interest and importance of the technology in this area. These developments underline the relevance of blockchain far beyond its original domain and show its increasing interdependence with different business areas.

A discrepancy between consulting activities and actual implementation can be observed particularly in supply chain management and energy management. While the consulting rate in supply chain management is 48% and in energy management 30%, actual usage is only 12% and 5% respectively. This suggests that despite the perceived potential and interest, implementation in the real economy is a challenge. The discrepancy shows that while conceptualisation and consultation are progressing, practical application is still lagging behind expectations, which will require future implementation efforts.

Summarizing the answers, it can be concluded that the application of blockchain technology is most advanced in the field of financial services. In addition, a diversification of application areas can be observed, with digital identities, marketing and copyright & license management in particular on the rise. Great potential is also expected in supply chain management and energy management, although technological implementation here is still low. Health data management applications are less represented in the W3NOW sample.

2.2 INVESTMENTS & EMPLOYEES

For early adopters already working intensively with blockchain, the technology is a high and growing priority. More than a third (37%) of these entrepreneurs have more than 5 full-time employees working on blockchain. This indicates a strong commitment and deep roots in the technology.

Full-Time Equivalents

>0 - 1,0 FTE	26%
>1,0 - 5,0 FTE	37%
>5,0 - 10,0 FTE	12%
>10,0 - 25,0 FTE	14%
>25,0 FTE	11%

■ FTE share
■ thereof women
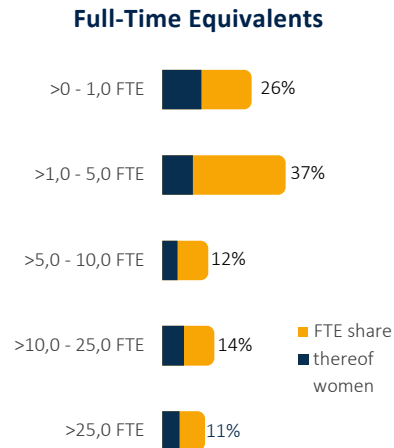
Figure 3: Basis n=125

There is also huge potential for growth. Almost a third (28%) of the companies surveyed plan to invest more than €500,000 in blockchain technology in 2024. These figures illustrate the serious strategic approach of many companies that see blockchain as a driver for their future growth. The high willingness to invest and the number of employees in various companies suggest that the use of blockchain technology by first movers will continue to grow.

Planned Investment Volume in 2024

17%
11%
23%
18%
31%

■ >1 Mio. €
■ >500.000€ - 1 Mio. €
■ >100.000€ - 500.000€
■ >50.000€ - 100.000€
■ ≤50.000€
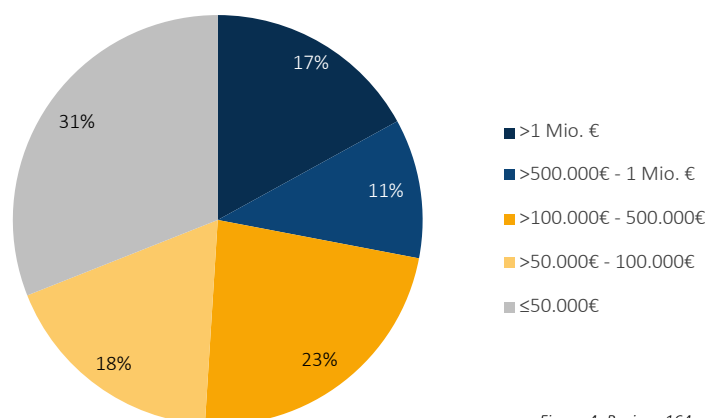
Figure 4: Basis n=164

2.3 POTENTIALS

Blockchain technology has proven to be a promising innovative technology and is being used in various fields. The W3NOW survey shows that participants see great potential in this technology. One of the main benefits highlighted by participants is the promotion of innovation (84% agreement) and another important benefit of blockchain technology is the improvement of information security (82%).

The immutable and transparent nature of the blockchain allows data to be stored and transferred securely. This makes manipulation and fraud more difficult. Another important aspect highlighted by respondents is the ability to build trust in collaboration with other organisations (81% agreement). Blockchain technology provides a transparent and immutable record of transactions, allowing organisations to build trustworthy and traceable relationships. There is less agreement that blockchain technology will increase the efficiency of business processes and reduce costs (64% agree in each case). Overall, however, there is general agreement about the potential of blockchain technology.

General Consent on the Topic of Blockchain

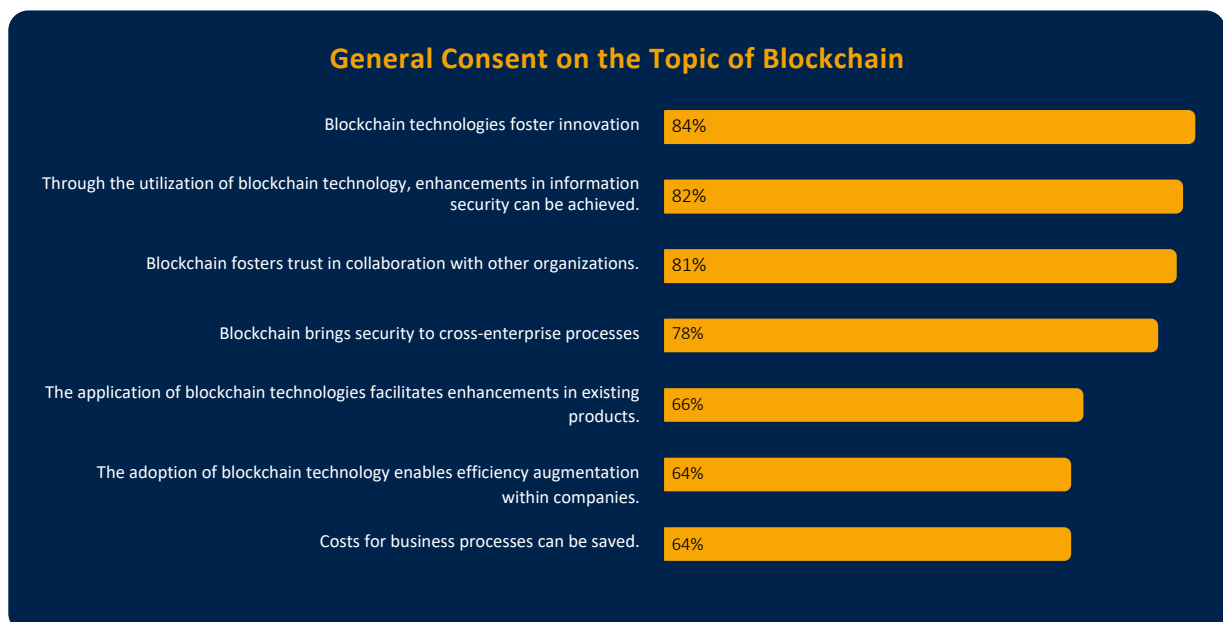|	
Blockchain technologies foster innovation	84%
Through the utilization of blockchain technology, enhancements in information security can be achieved.	82%
Blockchain fosters trust in collaboration with other organizations.	81%
Blockchain brings security to cross-enterprise processes	78%
The application of blockchain technologies facilitates enhancements in existing products.	66%
The adoption of blockchain technology enables efficiency augmentation within companies.	64%
Costs for business processes can be saved.	64%

Figure 5: Basis n=204

2.3.1 SUSTAINABILTY CRITERIA

Blockchain technology can also offer potential for compliance with sustainability (ESG) criteria. In particular, it can support transparency and disclosure of information (76% in favour). Avoiding corruption and unfair business practices (62% in favour) and ensuring data privacy and security (61% in favour) could also help with compliance with ESG criteria.

However, there is less support for using blockchain to prevent pollution (26% in favour) and reduce energy consumption (24% in favour). The potential for blockchain to improve the recognition of human rights (23% in favour) appears to be limited.

It can be concluded that blockchain technology can have a positive impact on some ESG provisions, in particular through transparency and disclosure of information. There are also ESG provisions where blockchain has limited potential.

Potential of Blockchain Technology for ESG Regulations

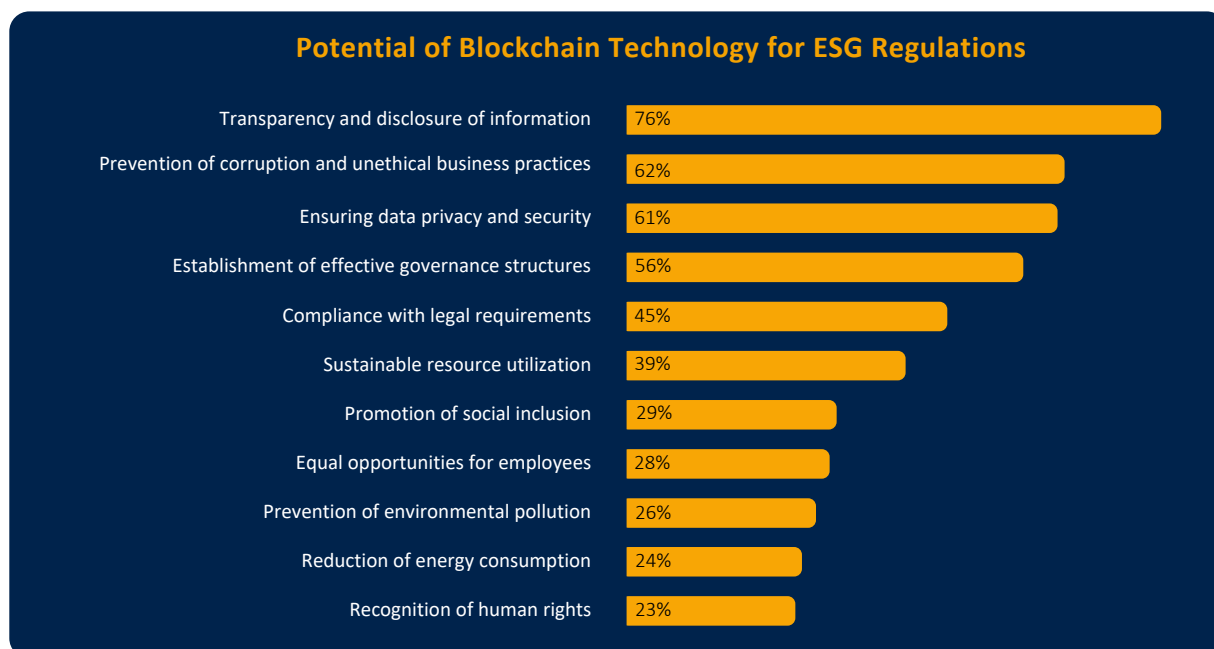|	
Transparency and disclosure of information	76%
Prevention of corruption and unethical business practices	62%
Ensuring data privacy and security	61%
Establishment of effective governance structures	56%
Compliance with legal requirements	45%
Sustainable resource utilization	39%
Promotion of social inclusion	29%
Equal opportunities for employees	28%
Prevention of environmental pollution	26%
Reduction of energy consumption	24%
Recognition of human rights	23%

Figure 6 Basis n=204

2.3.2 SYERNGIES WITH ARTIFICIAL INTELLIGENCE

Blockchain also offers potential in the convergence with artificial intelligence. According to the survey, 37% of respondents are looking closely at the synergies between blockchain and artificial intelligence, while 50% are looking at it somewhat. 9% of respondents said they would like to explore the synergetic potential in the future, while only 4% said it was not an issue for them.

Engaging with Synergies Between Blockchain and AI

Intensive
37%

Somewhat
50%

Not yet
9%

Don't deal with it
4%
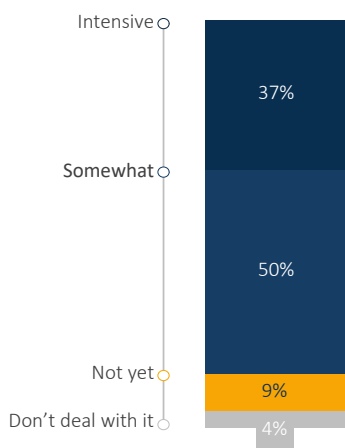
Figure 7: Basis n=204

Consent to Blockchain's Potential in Various AI Use-Cases

Trusted AI — 76%

Intelligent Internet of Things — 73%

Supply Chain Risk Analysis — 64%

Federated Machine Learning — 61%
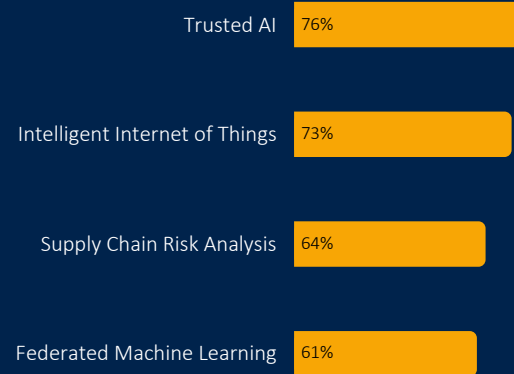
Figure 8: Basis n=176

Respondents recognise the potential for synergies, particularly in the use of trusted AI and the intelligent Internet of Things. Blockchain technology may also have a positive impact on AI use cases such as supply chain risk analysis or federated machine learning. These assessments point to a great relevance of the potential for synergies between blockchain and artificial intelligence in various application areas. The integration of blockchain into AI applications should therefore be further explored.

2.4 CHALLENGES

Alongside the potential, there are also challenges to consider when using blockchain technology. More than a third of respondents (36%) say that legal and regulatory compliance is the biggest challenge for businesses. Technical challenges also remain. Blockchain technology can lead to a poor user experience due to its technical complexity (33% agree). Some companies also lack the expertise and skilled labour to successfully implement blockchain projects (32% agree). The complex nature of blockchain technology requires specific expertise in areas such as cryptography, distributed systems and smart contracts.

Scaling blockchain technology is seen as a challenge by only a few respondents (8% agree). The long-term viability of using the technology is also only slightly questioned by participants (8% in favour). However, the challenges may differ depending on the use case. These use-case specific challenges will be outlined in-depth in the upcoming report published by the Hanseatic Blockchain Institute.

Implementation Challenges of Blockchain Technology

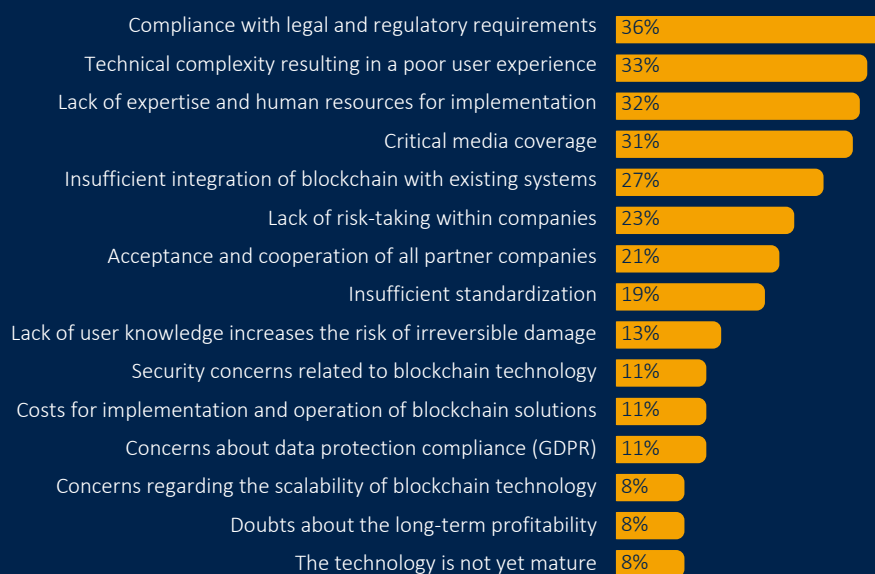| Challenge	%
Compliance with legal and regulatory requirements	36%
Technical complexity resulting in a poor user experience	33%
Lack of expertise and human resources for implementation	32%
Critical media coverage	31%
Insufficient integration of blockchain with existing systems	27%
Lack of risk-taking within companies	23%
Acceptance and cooperation of all partner companies	21%
Insufficient standardization	19%
Lack of user knowledge increases the risk of irreversible damage	13%
Security concerns related to blockchain technology	11%
Costs for implementation and operation of blockchain solutions	11%
Concerns about data protection compliance (GDPR)	11%
Concerns regarding the scalability of blockchain technology	8%
Doubts about the long-term profitability	8%
The technology is not yet mature	8%

Figure 9: Basis n=204

2.5 GERMANY IN COMPARISON

Respondents consider the German economy to be a latecomer in international comparison. Germany receives an average score of 2.4 on a scale of 1 to 5, indicating that the German economy is less advanced than other countries in the application of blockchain technology. Particularly in continental Europe, countries such as Switzerland, Liechtenstein and Portugal are considered more advanced.
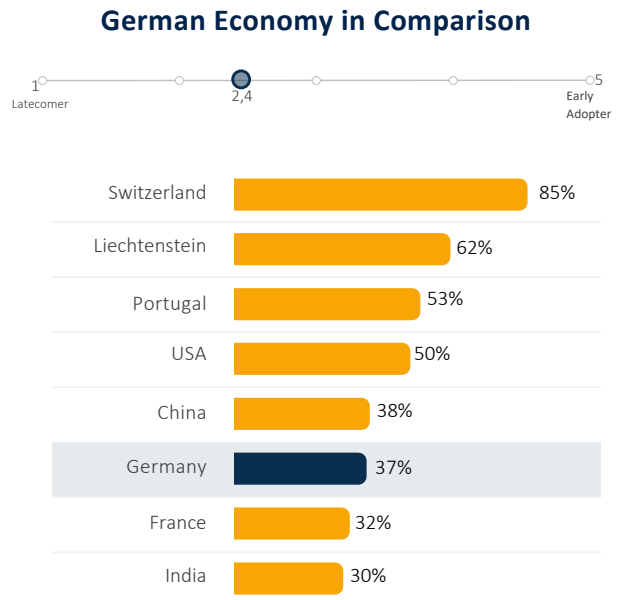
German Economy in Comparison

Switzerland	85%
Liechtenstein	62%
Portugal	53%
USA	50%
China	38%
Germany	37%
France	32%
India	30%

Figure 10: Basis n=204

Outside of Europe, the US and China are considered leaders in the application of blockchain technology compared to Germany. It is emphasised that Germany is seen as a laggard internationally and therefore needs to step up its efforts to become more competitive in the field of blockchain technology.

German regulation by comparison

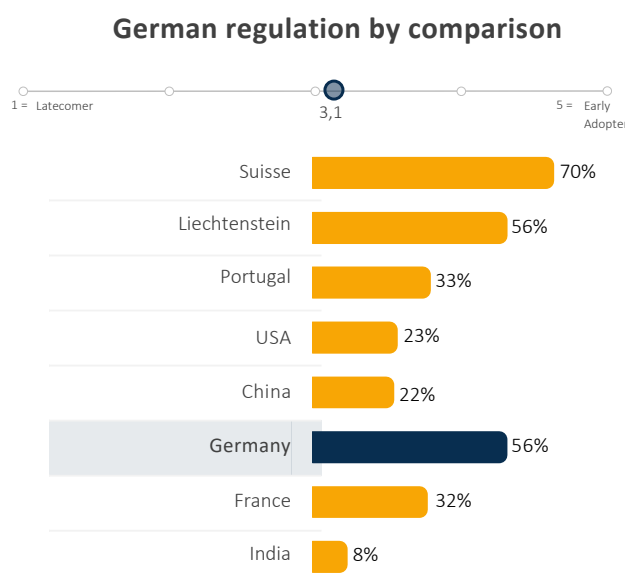|	
Suisse	70%
Liechtenstein	56%
Portugal	33%
USA	23%
China	22%
Germany	56%
France	32%
India	8%

Figure 11: Basis n=204

More than a third of respondents (36% in favour) see regulatory compliance as an obstacle. Nevertheless, German regulation is viewed favourably by international standards. Germany takes second place behind Switzerland and is on a par with Liechtenstein. German regulation is seen as neither a laggard nor a leader, scoring 3.1 on a scale of 1 to 5.

This suggests that German regulation is perceived as sound and adequate in international comparison. However, there is still room for improvement to catch up with countries such as Switzerland. This assessment shows that Germany is on the right track compared to other countries when it comes to blockchain regulation. However, the data also shows that there is still potential for further improvement in order to be recognised as a pioneer.

2.6 BLOCKCHAIN NETWORKS

Blockchain technology can be divided into public and private systems. The key distinction is who has control and access to the data. If the data is publicly available, it is called a public blockchain. If transparency is limited, it is a private blockchain. A distinction can also be made as to whether authorisation is required to manage the blockchain and thus to control (collaborative) data. A blockchain with restricted access is called a permissioned blockchain, while one without is called "permissionless". A distinction can therefore be made between public permissionless, public permissioned and private permissioned blockchains. Each of these variants has its own advantages and disadvantages for specific use cases.

a) Public-Permissionless Blockchain

Public permissionless blockchains are used very frequently. 76% of respondents use this type of blockchain, particularly in financial services (57%), digital identities (30%), marketing (22%) and copyright and licensing management (17%).

Usage of Public-Permissionless Blockchain

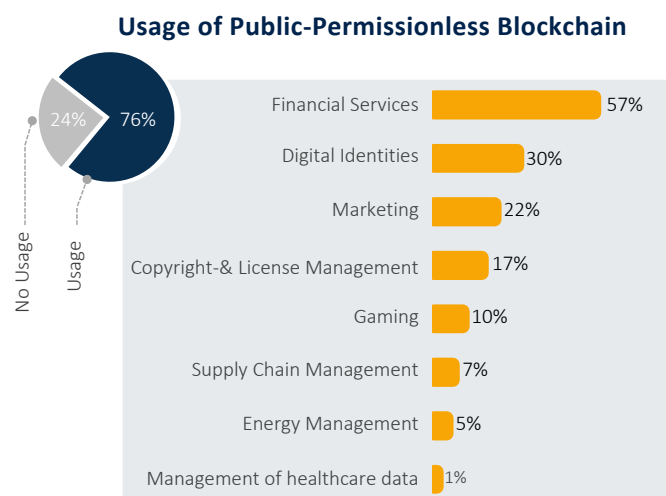|	
Financial Services	57%
Digital Identities	30%
Marketing	22%
Copyright-& License Management	17%
Gaming	10%
Supply Chain Management	7%
Energy Management	5%
Management of healthcare data	1%

No Usage: 24% — Usage: 76%

Figure 12 Basis: n=111

The main reasons for using a public permissionless blockchain are the benefits of transparency (79%), decentralisation (77%) and immutability of data (61%). In contrast, inclusivity (43%) does not appear to be the most important reason for using a public permissionless blockchain. The results show that the public-permissionless blockchain is widely used in various industries due to its transparent, decentralised nature and the immutability of the data. The ability to store data securely and transparently, and to conduct transactions without intermediaries, makes it an attractive solution for a variety of use cases.
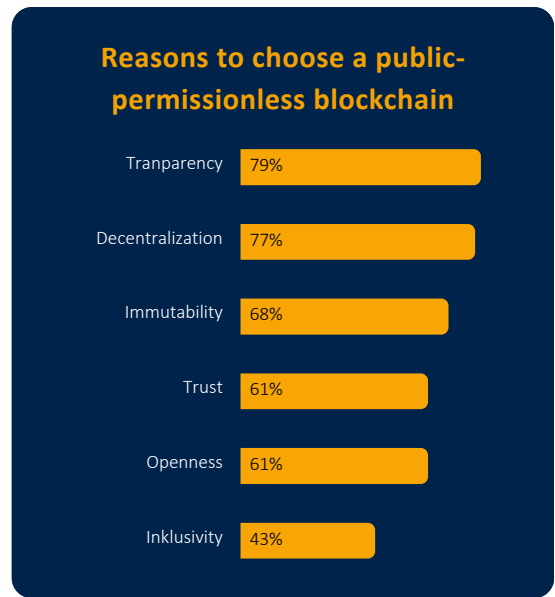
Reasons to choose a public-permissionless blockchain

Tranparency	79%
Decentralization	77%
Immutability	68%
Trust	61%
Openness	61%
Inklusivity	43%

Figure 13: Basis n=87

b) Public-Permissioned Blockchain

The use of public-permissioned blockchains is less widespread. Only 49% of respondents are using them. They are most commonly used in financial services (43%), digital identities (30%), copyright and licence management (17%) and supply chain management (17%).

Usage of Public-Permissioned Blockchain

No Usage 51%
Usage 49%

Financial Services	43%
Digital Identity	30%
Marketing	11%
Copyright-& License Management	17%
Gaming	11%
Supply Chain Management	17%
Energy Management	2%
Management of healthcare data	0%

Figure 14: Basis n=108

Reasons to Choose a Public-Permissioned Blockchain

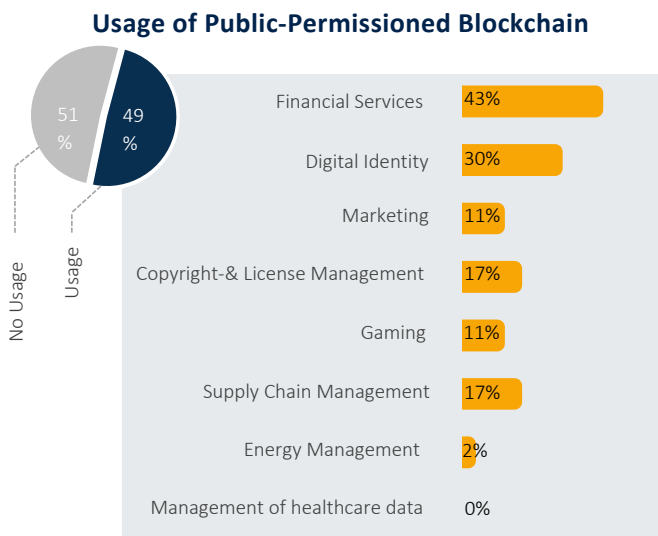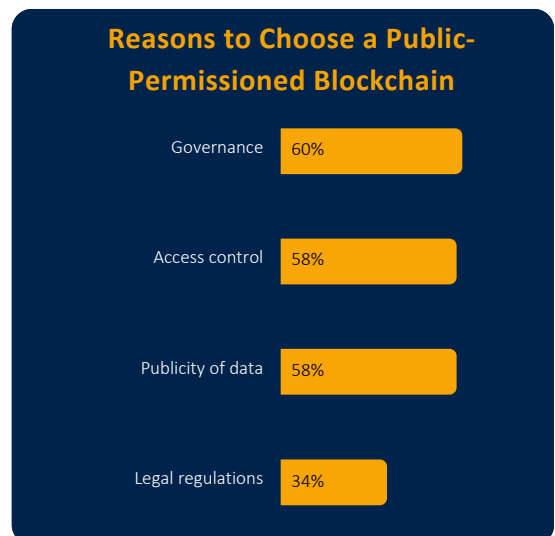|	
Governance	60%
Access control	58%
Publicity of data	58%
Legal regulations	34%

Figure 15: Basis n=53

The results of the survey show that the public permissioned blockchain is mainly used because of its governance structures (68% in favour), access control (58% in favour) and the ability to make data publicly available (58% in favour). Legal regulations play a secondary role (34% in favour).

c) Private-Permissioned Blockchain

The private-permissioned blockchain is used by only 34% of respondents, making it the least widespread. It is mainly used in the financial services sector (53%). However, it is worth noting that it is also widely used in supply chain management (26%). In absolute terms, more supply chain management adopters are using the privately permissioned blockchain (number: 26) than the public permissioned (18) or public permissionless (8) blockchain.
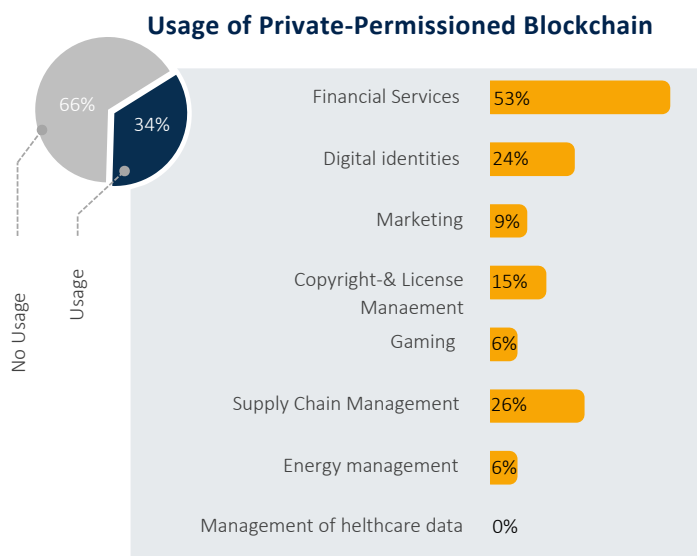
Usage of Private-Permissioned Blockchain

Category	Value
Financial Services	53%
Digital identities	24%
Marketing	9%
Copyright-& License Manaement	15%
Gaming	6%
Supply Chain Management	26%
Energy management	6%
Management of helthcare data	0%

Figure 16: Basis n=99

The main reason for using a privately permissioned blockchain is the confidentiality of data (59% in favour) that this type of blockchain allows. Scalability and transaction speed seem to play a secondary role in the choice of a privately permissioned blockchain.

Reasons to Choose a Private-Permissioned Blockchain

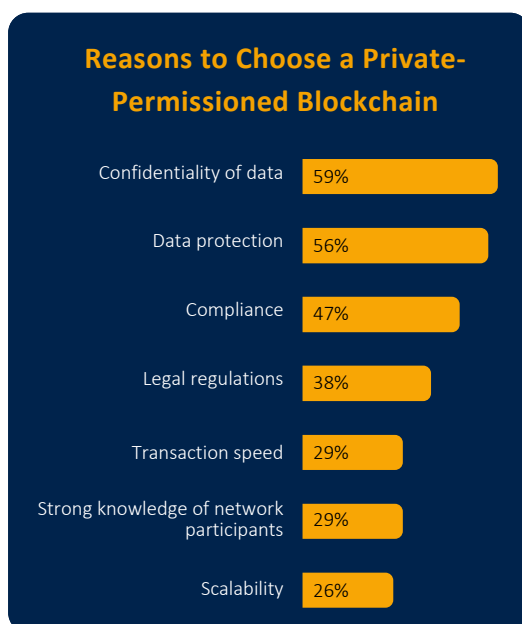| Reason	Value
Confidentiality of data	59%
Data protection	56%
Compliance	47%
Legal regulations	38%
Transaction speed	29%
Strong knowledge of network participants	29%
Scalability	26%

Figure 17: Basis n=34

The choice of a blockchain network depends heavily on the specific use case and the requirements for transparency, governance, privacy and decentralisation. Public permissionless blockchains are valued for their transparency and decentralisation. However, public permissioned and private permissioned blockchains offer additional control mechanisms and privacy options that can be beneficial in certain industries and application areas, such as supply chain management.

2.7 SMART CONTRACTS & BITCOIN

Nick Szabo first defined smart contracts in 1997, whereby a contract is represented in software form and is intended to be tamper-proof. Certain characteristics such as observability, online enforceability, verifiability and privacy should be preserved. [Source: Szabo, N. (1997). Formalising and securing relationships on public networks. First Monday, 2(9). https://doi.org/10.5210/fm.v2i9.548]

Smart contracts have now established themselves as the foundation of blockchain technology and are more commonly used than Bitcoin. According to the W3NOW survey, 94% of respondents use blockchain technology for smart contracts, while only just under a third (32%) use Bitcoin. In the financial services sector, 86% of companies use smart contracts in their operations. Bitcoin is integrated into their business processes by 50% of companies in the financial services sector. In the IT and telecommunications sector, 98% of companies use smart contracts, while 31% of them integrate Bitcoin into their business activities. The higher adoption of smart contracts compared to Bitcoin could indicate that companies find the automated contract functions of smart contracts more useful.

94%
32%
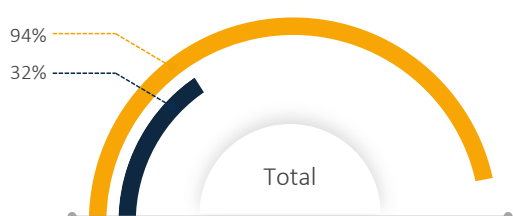
Total

What technologies do you use in your company?

■ Smart Contracts   ■ Bitcoin

86%
50%

Finance

98%
31%

IT & Telko

Figure 18: Basis Total: n=115, Basis Finance: n = 36, Basis IT & Telko: n = 48

2.7.1 SMART CONTRACTS

Smart contracts are primarily used by respondents for non-fungible tokens (61%) and asset tokenisation (56%). Zero-Knowledge Rollups or Optimistic Rollups are only used by 27% of respondents.
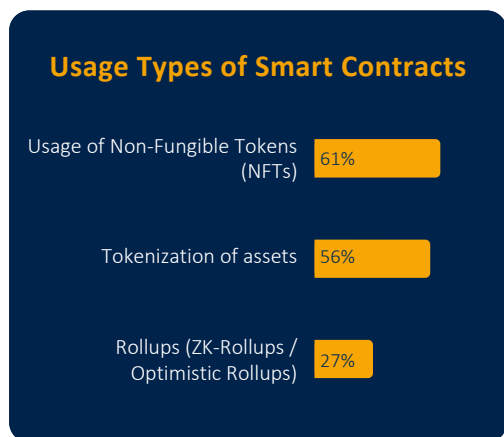
Usage Types of Smart Contracts

Usage of Non-Fungible Tokens (NFTs)	61%
Tokenization of assets	56%
Rollups (ZK-Rollups / Optimistic Rollups)	27%

Figure 19: Basis n=108

Reasons for Using Smart Contarcts

Exploring new business areas	59%
Increased efficiency through automation	57%
Independence from intermdiaries	53%
Improving data integrity	50%
Process optimization	44%
High reliability through standardization	37%
Determination of governance structures	30%

Figure 20: Basis n=108

The main reasons for using smart contracts are to explore new business opportunities (59% agree), to increase efficiency through automation (57% agree) and to reduce dependence on intermediaries (53% agree). The ability to create new governance structures through smart contracts (30% in favour) and to ensure high reliability through standardisation (37% in favour) appear to be less relevant.

2.7.2 NON-FUNGIBLE TOKENS (NFT)

The use of non-fungible tokens (NFTs) is particularly common for marketing (64% of NFT users) and for proof of certificates (56% of NFT users). The use of NFTs as data NFTs (23% of NFT users) seems to be less important.
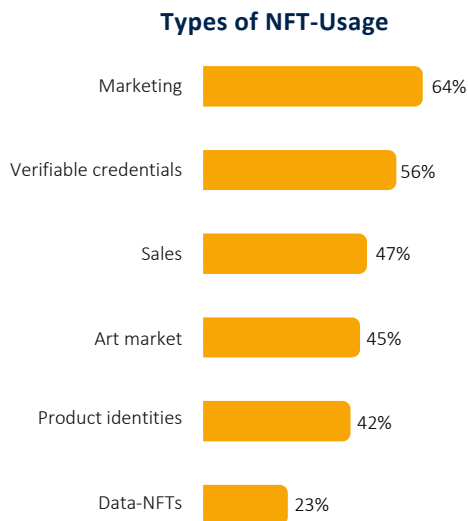
Types of NFT-Usage

Marketing	64%
Verifiable credentials	56%
Sales	47%
Art market	45%
Product identities	42%
Data-NFTs	23%

Figure 21: Basis n=66

Advantages of NFTs

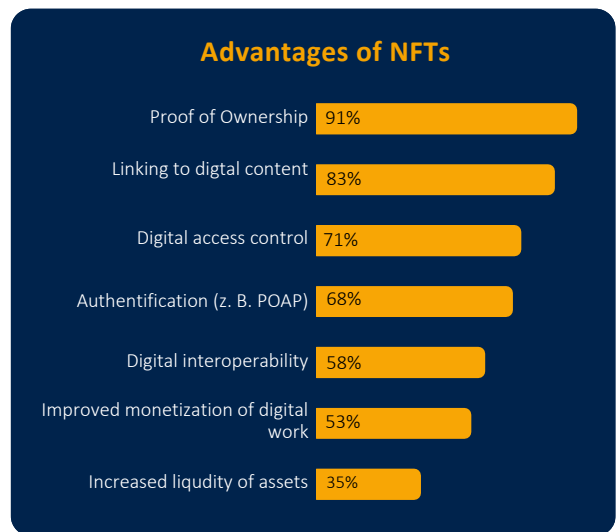|	
Proof of Ownership	91%
Linking to digtal content	83%
Digital access control	71%
Authentification (z. B. POAP)	68%
Digital interoperability	58%
Improved monetization of digital work	53%
Increased liquidty of assets	35%

Figure 22: Basis n=66

Users see significant benefits in displaying proof of ownership (91% in favour), linking digital content (83% in favour) or enabling digital access control (71% in favour). Authentication is another benefit that receives overwhelming support (68%). On the other hand, achieving greater asset liquidity is seen as a benefit by only 35% of respondents.

2.7.3 TOKENISATION

Tokenisation has a wide range of applications. It is most commonly used for bonds (46%), art and collectibles (39%), shares in start-ups (33%) or real estate (33%). Less commonly tokenised are derivatives (21%), shares (21%) and commodities (15%).

Usage Types for Tokenisation

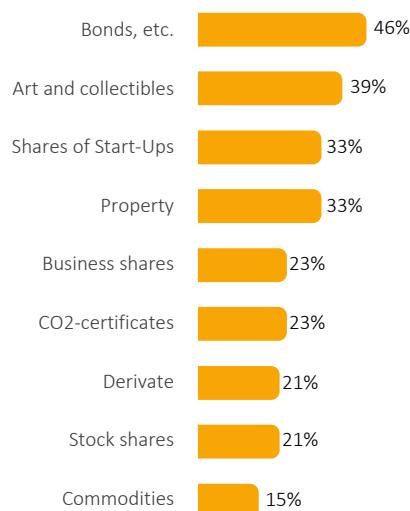|	
Bonds, etc.	46%
Art and collectibles	39%
Shares of Start-Ups	33%
Property	33%
Business shares	23%
CO2-certificates	23%
Derivate	21%
Stock shares	21%
Commodities	15%

Figure 23: Basis n=61

Advantages of Tokenization

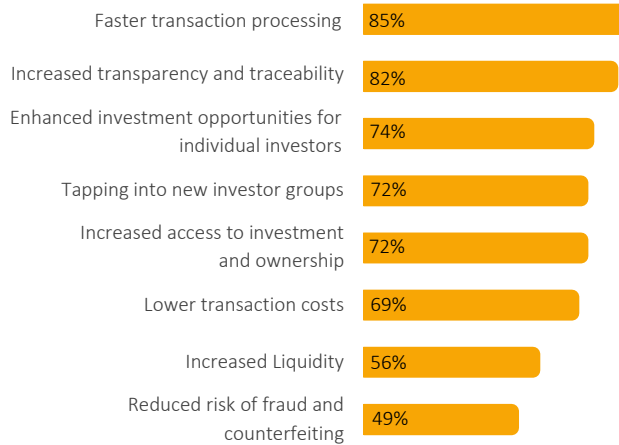| Advantage	%
Faster transaction processing	85%
Increased transparency and traceability	82%
Enhanced investment opportunities for individual investors	74%
Tapping into new investor groups	72%
Increased access to investment and ownership	72%
Lower transaction costs	69%
Increased Liquidity	56%
Reduced risk of fraud and counterfeiting	49%

Figure 24: Basis n=61

Tokenisation offers numerous benefits, including faster transaction processing (85%), increased transparency and traceability (82% in favour), increased transparency and traceability of transactions (82% in favour) and improved accessibility for retail investors (74% in favour). However, only just under half (49%) of respondents see a benefit of tokenisation in reducing the risk of fraud and counterfeiting.

The main challenges to tokenisation are compliance with legal and regulatory requirements (52%) and acceptance and collaboration with partner organisations (49%). A lack of risk appetite within organisations (41%) and a lack of expertise and resources (41%) also appear to be challenges. Tokenization is less challenging in terms of long-term viability (10%) or the fact that the technology is not yet mature (7%).

Challenges in Tokenization

Challenge	%
Compliance with legal and regulatory requirements	52%
Acceptance and cooperation of all partner companies	49%
Risk aversion in corporate culture	41%
Expertise and human resource shortage for implementation	41%
Inadequate blockchain integration with existing systems	39%
Critical media reporting	39%
Technical complexity leading to poor user experience	39%
Insufficient standardization	36%
Implementation and operational costs of blockchain solutions	25%
Security concerns related to blockchain technology	21%
User knowledge deficiency increasing risk of irreversible damage	18%
Data privacy compliance concerns	15%
Long-term profitability doubts	10%
Scalability concerns	8%
Immaturity of technology	7%

Abbildung 25: Basis n=61

2.7.4 BITCOIN

Bitcoin is not only considered a pioneer, but has also established itself as the cryptocurrency with the highest market capitalisation to date. In the German economy, bitcoin is mainly used as an investment (57%). Slightly less than half of users allow their customers to pay with Bitcoin (49%). Only around a third (32%) of bitcoin users use the Lightning network, a second layer of bitcoin, to make payments. Bitcoin mining is a niche activity (5%).
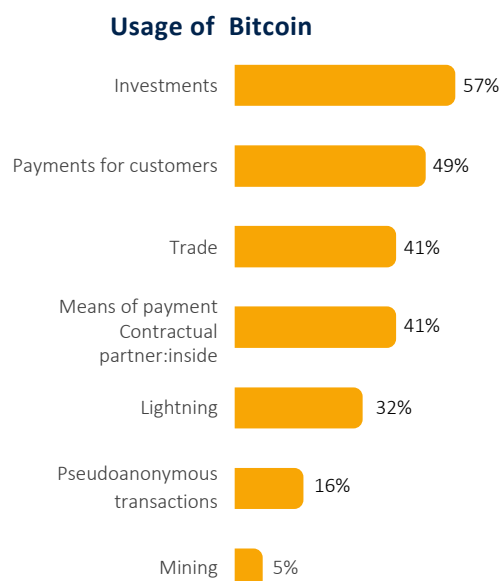
Usage of Bitcoin

Category	%
Investments	57%
Payments for customers	49%
Trade	41%
Means of payment Contractual partner:inside	41%
Lightning	32%
Pseudoanonymous transactions	16%
Mining	5%

Figure 26: Basis n=37

The main reasons for using bitcoin are its positioning for the financial market of the future (70% in favour) and the ability to make peer-to-peer (p2p) payments without an intermediary (54% in favour). Only 11% of bitcoin users say that bitcoin enables compliance with ESG criteria. This data shows that the use of bitcoin in the German economy is focused on personal investments and payments.

Reasons for Using Bitcoin

Reason	%
Establishing the future financial market	70%
Enables P2P payments without an intermediary	54%
Store of value for company	51%
Enables new business models	43%
Censorship-resistant payment method for transactions	38%
Efficient & cost effective information transfer	32%
Enables compliance with ESG	11%

Figure 27: Basis n=37

2.8 OUTLOOK

According to the respondents, various measures are desirable to promote the progress of blockchain technology in Germany. Specifically, they call for the government to create experimental and regulatory freedom for application testing (85% in favour). Concrete measures that could be taken to promote blockchain adoption in Germany include a clear regulatory framework (74% in favour) and government support for proof-of-concept projects (73% in favour).

For the industry, it is important to promote exchange and cooperation between start-ups and SMEs (78% in favour) and to adopt technological standards in blockchain development (67% in favour). In general, there is strong support for measures to educate the public about blockchain technology (81%). Ultimately, close cooperation between government and industry is crucial to creating a favourable environment for blockchain adoption in the German economy.

Measures for Promoting Blockchain Technology in Germany

Measure	Percentage
Experimental and regulatory sandboxes for application testing	85%
Educating the general public about blockchain technoloy	81%
Promotion of exchange and cooperation between start-ups and SMEs	78%
Clear regulatory environment	74%
State funding for proof of concept projects	73%
Technological standards in blockchain development	67%

Figure 28: Basis n=204

3.1 METHODOLOGY & COLLECTION STRCUTURE

As part of the W3NOW project, this survey was designed and conducted as an online survey. It was distributed both via a dedicated panel and via the Hanseatic Blockchain Institute network using various media channels. The average duration of the survey was set at approximately 15 minutes, although this time could vary depending on the individual responses of the participants. The survey period ran from 20 November 2023 to 29 December 2023, during which comprehensive data was collected to enable an in-depth analysis of the current blockchain landscape in Germany. The target group for the survey consisted of specialists working in companies where blockchain technology plays a role. A total of 204 people were recruited to participate in the study, providing a solid database for the research. The survey was geographically focused on Germany, which allowed for a region-specific analysis.

In terms of sample structure, the W3NOW sample was predominantly made up of blockchain experts. A clear majority of 67% of respondents said they were very familiar with blockchain, while a further 23% were at least familiar with the technology. People who were not familiar with blockchain were not represented in the sample. Interestingly, the W3NOW sample was largely made up of executives. A significant proportion of respondents, 76%, held senior positions in their organisations, with 51% in the C-suite.
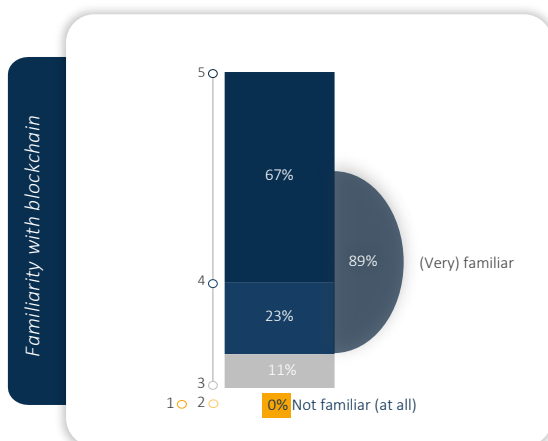

Familiarity with blockchain

5

67%

89% (Very) familiar

4

23%

3

11%

1 2 0% Not familiar (at all)

Figure 29: Basis n=204

Company position

Position	%
Management / CEO	51%
Division Management	14%
Department head	7%
Team leader	4%
No management responsibility	18%
Other positions	6%

Figure 30: Basis n=204

In terms of company size, the survey found that the majority of participants work in small companies. Specifically, 42% of companies have between 1 and 9 employees, followed by 28% with between 10 and 49 employees. Companies with 50 to 999 employees made up 14% of the sample, while 15% of respondents came from companies with more than 1000 employees.
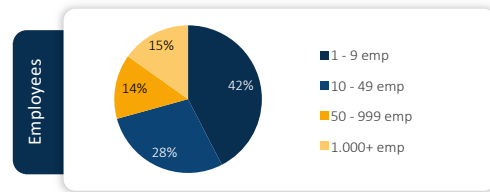

Figure 31: Basis n=204

The turnover distribution of the participating companies was also heterogeneous. The majority (51%) had an annual turnover of less than EUR 2 million. A further 10% of the companies had a turnover of between 2 and 10 million euros, 5% had a turnover of between
10 to 50 million euro, while 15% of the enterprises had an annual turnover of more than 50 million euro.
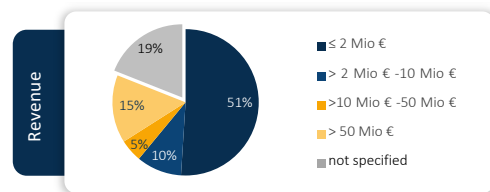
Figure 32: Basis n=204

Finally, it is worth noting that participants came from a wide range of industries, with IT & Telecommunications (31%), Financial Services (21%) and Consultancy (15%) being the most represented sectors. Other sectors included media & entertainment, education, arts & culture, automotive, retail, energy, manufacturing, healthcare, engineering, public service/government, legal, and environment & sustainability.
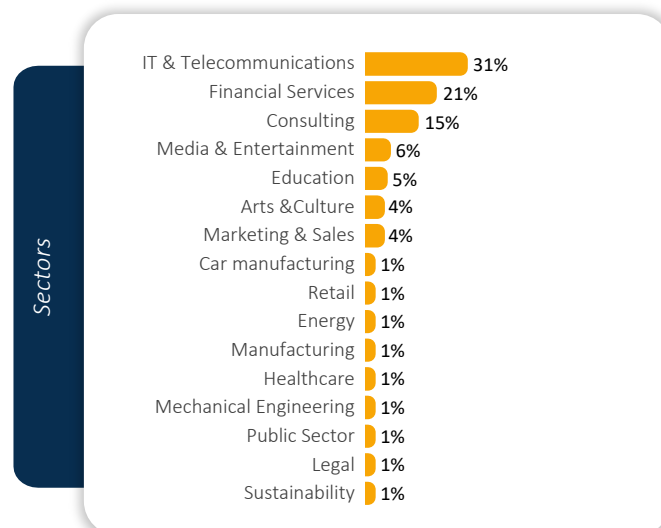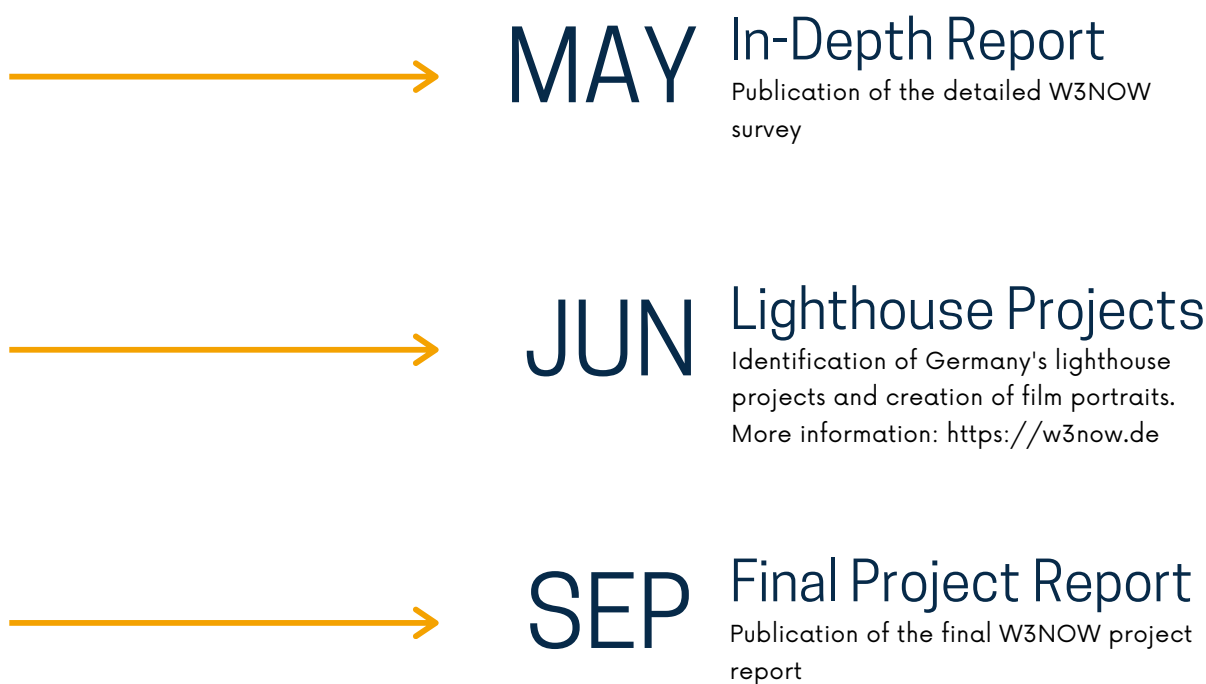

Figure 33: Basis n=204

3.2 NEXT STEPS

The Hanseatic Blockchain Institute is pleased to be able to provide you with an initial overview of the blockchain adoption in Germany. We have summarised the most important figures and statements for you in our Mini-report.

In May, we will publish a more detailed report that will provide in-depth insights into the various application areas of blockchain technology in Germany. We will cover topics such as financial services, marketing, energy management, supply chain management, digital identities, copyright and licence management, gaming and the management of healthcare data.

We hope that our Mini-report has provided you with an initial insight into the many possible applications of blockchain technology in Germany. If you have any questions, please do not hesitate to contact us by email at info@blockchaininsitute.eu.

MAY **In-Depth Report**
Publication of the detailed W3NOW survey

JUN **Lighthouse Projects**
Identification of Germany's lighthouse projects and creation of film portraits. More information: https://w3now.de

SEP **Final Project Report**
Publication of the final W3NOW project report

3.3 LIST OF ILLUSTRATIONS

Figure 1: Q2.1: "How do you work with blockchain technology?", filter: consultants who advise on the topic of blockchain or blockchain technology is already used in the company, basis: n=138;

Figure 2: Q3: "In which areas are blockchain technologies already being used/planned in your company?", filter: No consultants, blockchain technology is at least planned in the company, basis: n = 132;
Q4: In which areas has your company already provided advice on the use of blockchain technology?", Filter: Consultants who advise on the topic of blockchain, base: n = 23, *The data should be interpreted with caution due to the small base.; Statista 2023/2024.

Figure 3: Q32: "How high are your company's planned investments in blockchain technology in 2024?", filter: No consultants, blockchain technology at least discussed in the company and investments planned, basis: n=146;
Statesman 2023 / 2024.

Figure 4: Q28: "How many full-time equivalents (FTE for short) work in your company on implementing and/or planning blockchain applications?", answers = 0 and "don't know" excluded, filter: no consultants, blockchain Technology at least discussed in the company, basis: n = 125;
Q29: "How many women (converted into FTE) work in your company on implementing and/or planning blockchain applications?", share of FTE in the respective group, filter: FTE min. >0, basis: n=125;

Figure 5: Q1: "In general, how much do you agree with the following statements about blockchain?", answers on 5pt scale, top 2 values: "Agree (completely)" shown, base: n=204; Statista 2023/2024,

Figure 6: Q66: "In your opinion, to what extent can blockchain technology advance the following ESG topic areas within your company?", top 2 values shown, filter: no consultants, basis: n=173; Statista 2023 / 2024.

Figure 7: Q73: "To what extent have you already dealt with the synergies of the two future technologies blockchain and artificial intelligence within your company?", Basis: n=204;

Figure 8: Q74: "How big do you see the potential of blockchain technology for the following use cases?", filter: at least somewhat dealt with synergies, basis: n=176; Statista 2023/2024.

Figure 9: Q2: "What are the biggest challenges in general with regard to the use of blockchain technologies?", answer options partly shown in abbreviated form, filter: consultants who at least deal with blockchain or blockchain technology is at least discussed in the company Multiple answers possible (max. 3), base: n=193; Statista 2023/2024

Figure 10: Q69: "With regard to blockchain technologies, please classify: your company in comparison to other companies", answer options "German economy in a global comparison" and "German regulation in an international comparison" shown, basis: n=204; Q70: "How do you assess the current status of the countries mentioned when it comes to blockchain in an international comparison?", Basis: n = 204;

Figure 11: Q69: "With regard to blockchain technologies, please classify: your company in comparison to other companies", answer options "German economy in a global comparison" and "German regulation in an international comparison" shown, basis: n=204; Q71: "How do you assess the current standard of legal regulations in the countries mentioned regarding blockchain in an international comparison?", Basis: n = 204; Statista 2023/2024.

Figure 12: Q20: "In which of the following areas do you use a public-permissionless blockchain?", answer options partly shown in abbreviated form, "Don't know" taken out, non-use in an industry perspective also taken out, filter: No consultants and blockchain is used in one of the Areas used, multiple answers possible, basic usage: n = 111, basic areas: n = 87;

Figure 13: Q21: "For what reasons did you decide on a public-permissionless blockchain?", "Don't know" not shown, filter: If public-permissionless blockchain is used, multiple answers possible, basis: n=87; Statista 2023/2024.

Figure 14: "In which of the following areas do you use a public-permissioned blockchain?", answer options partially shown in abbreviated form, "Don't know" taken out, non-use from an industry perspective also taken out, filter: No consultants and blockchain is used in one of the areas , multiple answers possible, basic usage: n = 108, basic areas: n = 53;

Figure 15: "For what reasons did you decide on a public-permissioned blockchain?", "Don't know" not shown, filter: If public-permissioned blockchain is used, multiple answers possible, basis: n=53; Statista 2023/2024.

Figure 16 "In which of the following areas do you use a private-permissioned blockchain?", answer options partly shown in abbreviated form, "Don't know" taken out, non-use from an industry perspective also taken out, filter: No consultants and blockchain is used in one of the areas, Multiple answers possible, basic usage: n = 99, basic areas: n=34;

Figure 17: "For what reasons did you decide on a private-permissioned blockchain?", "Don't know" not shown, filter: If private-permissioned blockchain is used, multiple answers possible, basis: n=34; Statista 2023/2024.

Figure 18:Q6: "Which of the following technologies do you use in your blockchain applications in the company?", filter: No consultants, blockchain technology used in the company, multiple answers possible, base total: n=115, base finance: n = 36 , Basis IT & Telco: n = 48; Statista 2023/2024.

Figure 19: Q10: "What types of smart contracts do you use in your company?", filter: If smart contracts are used, "None of this / don't know" not shown, multiple answers possible, basis: n=108;

Figure 20: Q9: "Which of the following reasons are relevant for the use of smart contracts in your company?", filter: If smart contracts are used, multiple answers possible, "None of this / don't know" not shown, base: n=108 ; Statista 2023/2024.

Figure 21: "For which use cases do you use non-fungible tokens (NFTs) in your company?", answer options partly shown in abbreviated form, filter: If NFTs are used, multiple answers possible, basis: n=66;

Figure 22: Q12: "What advantages do you see for your company through the use of Non-Fungible Tokens (NFTs)?", filter: If NFTs are used, multiple answers possible, basis: n=66; Statista 2023/2024.

Figure 23: "Which assets are tokenized in your company?", answer options partly shown in abbreviated form, filter: If tokenization of assets is used, multiple answers possible, "Don't know" not shown, basis: n=61;

Figure 24: Q14: "What advantages do you see in the tokenization of assets compared to the previous type of asset management / way of transferring assets?", filter: If tokenization of assets is used, multiple answers possible, "None of these" not shown, Base: n=61; Statista 2023/2024.

Figure 25: Q15: "What challenges or concerns do you have regarding the tokenization of assets in your company?", answer options partially shown in abbreviated form, "None of these" not shown, filter: If tokenization of assets is used, multiple answers possible, basis : n=61; Statista 2023/2024.

Figure 26: Q7: "How do you use Bitcoin in your company?", answer options partly shown in abbreviated form, filter: If Bitcoin is used, multiple answers possible, "other" not shown, basis: n=37;

Figure 27: Q8: "Why do you use Bitcoin in your company?", answer options partly shown in abbreviated form, filter: If Bitcoin is used, multiple answers possible, "None of this/don't know" not shown, basis: n=37; Statista 2023/2024.

Figure 28: Q72: "How much do you agree with the following statements on the subject of blockchain?", top 2 values shown, answer options partially shown in abbreviated form, basis: n=204; Statista 2023/2024

Figure 29: S1: "How familiar are you with the topic of blockchain?", base: n=204;

Figure 30: S6: "What position do you hold in your company?", base: n=204; Statista 2023/2024.

Figure 31: S2: "Which of the following industries does your company operate in?", Basis: n=204; S4: "How many employees are employed in your company in total (including all company locations worldwide)?", Basis: n= 204;

Figure 32: S5: "What is your company's total annual business turnover (including all company locations)?", base: n=204; Statista 2023/2024.

Figure 33: S2: "Which of the following industries does your company operate in?", base: n=204;

W3NOW.DE
MINI REPORT

State of Blockchain Adoption in the German Economy

🌐 www.blockchaininstitute.eu
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Gefördert durch:

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