

BLOCKCHAIN & CRYPTO ADOPTION BY ENTERPRISES

Presentation @ 1st Onchain Economy Conference

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CONTEXT AND MOTIVATION

RESEARCH OBJECTIVES & QUESTIONS

Objectives:

- Detect adoption patterns of crypto/blockchain across industries and geographies
- Identify ecosystem and organizational readiness factors
- Explore public sentiment on crypto/blockchain adoption

Research Questions:

- **RQ1:** What industry-level trends can be observed in company adoption of blockchain and cryptocurrency technologies based on the job demand and NLP classification?
- **RQ2:** What are the major barriers that prevent companies from adopting cryptocurrencies and blockchain technology?
- **RQ3:** What is the public sentiment and discourse around cryptocurrency and blockchain adoption by companies, on social media platforms like Reddit?
- **RQ4:** Which countries and regions show the most enterprise activity in blockchain and cryptocurrency job postings?

THEORETICAL FOUNDATION

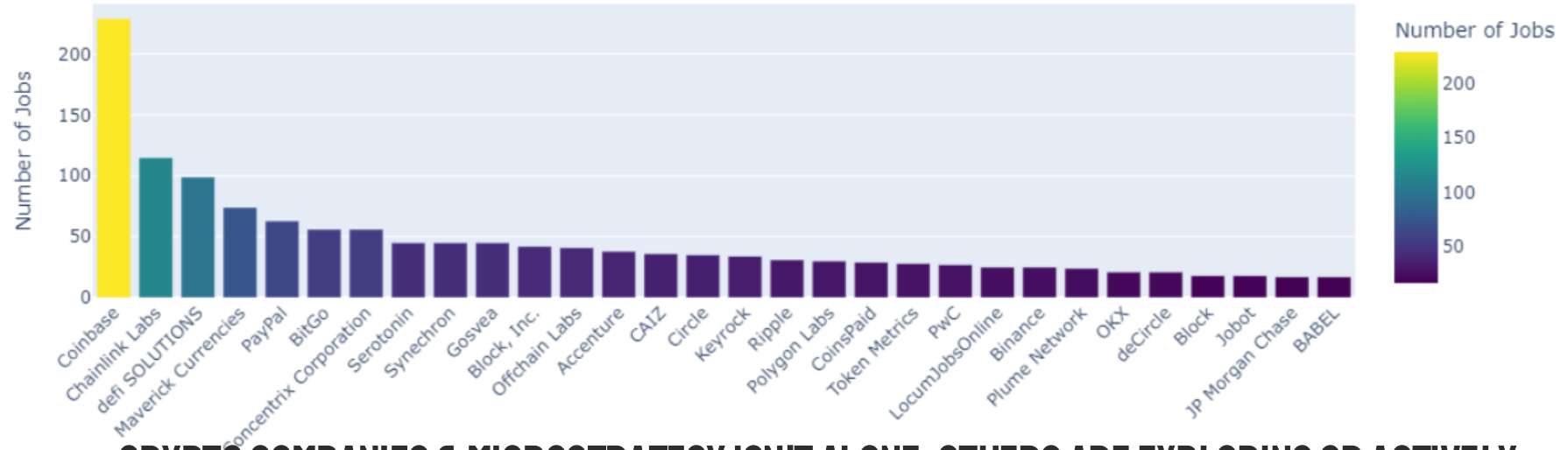
Frameworks:

- **Technology-Organization-Environment (TOE)**: analyzes internal and external factor
- **Blockchain Adoption Model (BAM)**: focuses on ecosystem readiness, organizational readiness, and perceived usefulness

Insights:

- **Adoption is not primarily limited by tech, but by ecosystem factors:**
 - Regulatory clarity
 - Governance standards
 - Institutional support
- **SMEs face greater barriers than large firms**
- Adoption is rarely just a matter of internal readiness; rather, It **depends on how mature and supportive the surrounding ecosystem is.**

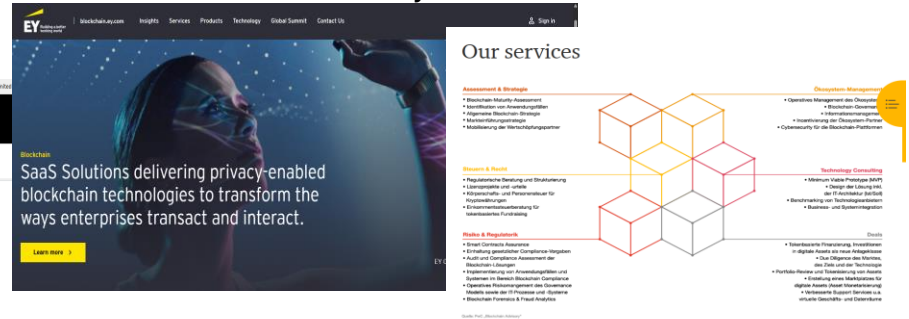
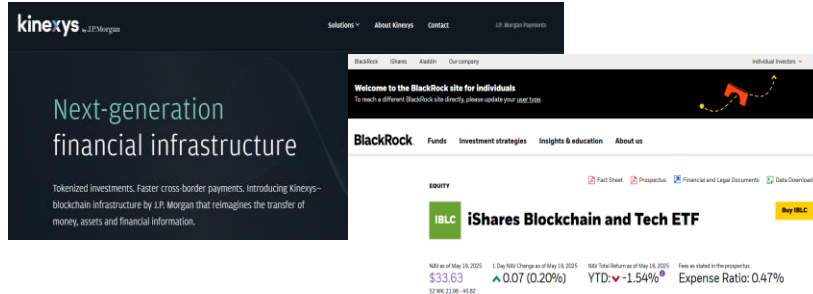
THE TOP 30 COMPANIES WITH REGARDS TO CRYPTOCURRENCIES AND BLOCKCHAIN TECHNOLOGY JOB POSTINGS



CRYPTO COMPANIES & MICROSTRATEGY ISN'T ALONE; OTHERS ARE EXPLORING OR ACTIVELY INTEGRATING 50% OF 100 FORTUNE FIRMS ARE EXPLORING BLOCKCHAIN

REAL-WORLD ADOPTION – ACCOUNTING, AUDITING AND CONSULTING

- **EY** has built multiple blockchain tools for ESG tracking and smart contract auditing.
- **JP Morgan** created its own platform, Kinexys, and recently executed a tokenized U.S. Treasury transaction on a public blockchain.
- **BlackRock** launched a blockchain-based money market fund.
- **PwC** offers assurance services for crypto auditing.
- **Accenture & Thales** have developed a blockchain-based system



METHODOLOGY AND DATA

APPROACH

Two methods:

- **Job Listings Scraping:** JobSpy has been utilized (Python tool) to gather over 4,400 blockchain/crypto-related job postings from platforms like LinkedIn, Glassdoor, and Indeed. Conducted in April 2025.

Reddit Discourse Analysis: I scraped 3,400 posts and over 100,000 comments to analyze public sentiment using Natural Language Processing (such as tokenization, text lowercase, lemmatize, remove stopwords), LDA (Latent Dirichlet Allocation) and VADER (Valence Aware Dictionary and Sentiment Reasoner). This study has analyzed content from around 1.4 million websites using deep learning and natural language processing to detect blockchain-related activity.

INDUSTRY-LEVEL PATTERNS - NATURAL LANGUAGE PROCESSING (NLP) BASED CLASSIFICATION APPROACH TO PREDICT THE INDUSTRY CATEGORIES

IT & Software: This category includes companies primarily engaged in software development, digital services, IT consulting, enterprise platforms, cloud computing, and other technology-driven services.

Consulting & Outsourcing: This category encompasses professional services companies which are focused on management consulting, IT consulting, business process outsourcing, etc.

Finance & Banking: This sector includes investment firms, commercial banks, fintech companies, insurance providers, etc.

Retail & Consumer Goods: This type of category includes supermarkets, clothing, companies, customer electronics brands, etc.

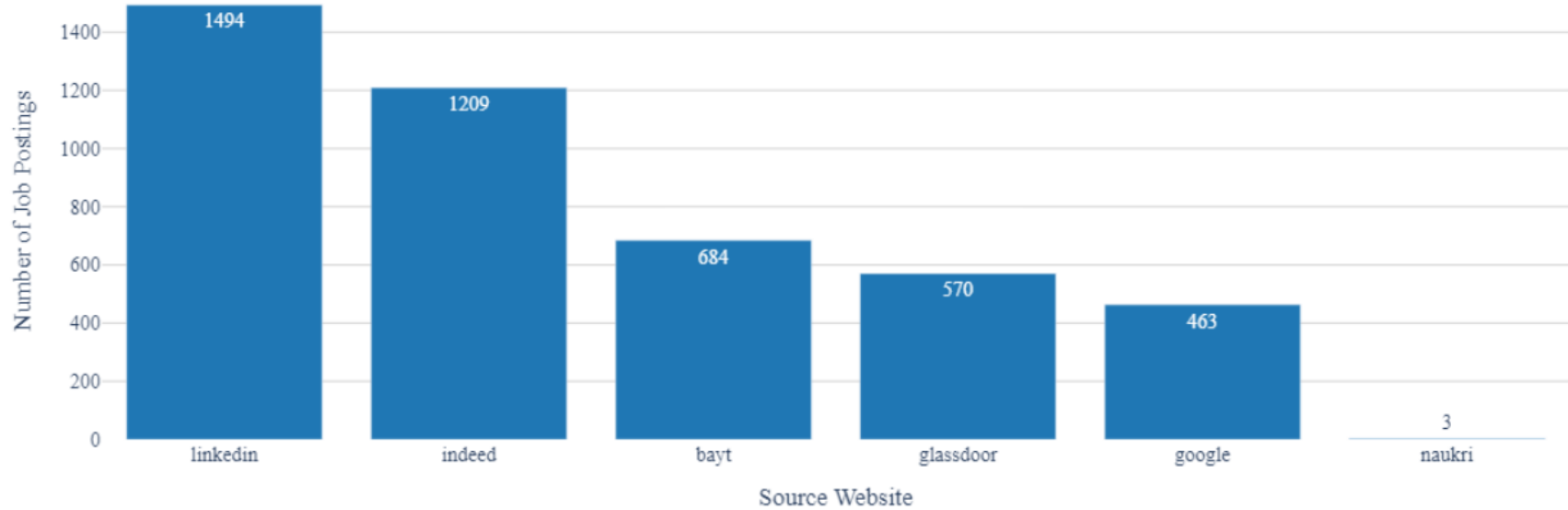
Aerospace & Banking: This category includes companies which are involved in aerospace engineering, defense technology, space exploration, etc.

Education & Training: This includes universities, educational platforms, corporate training organizations, etc.

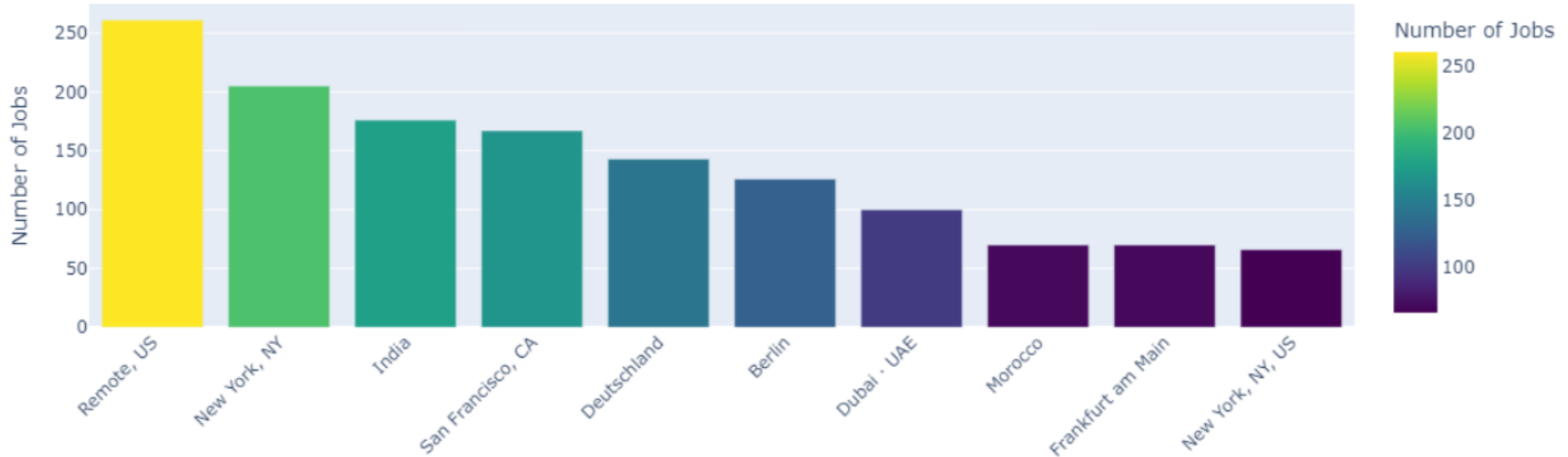
Logistics & Transportation: It includes transportation services, logistics operation / supply chain companies, etc.

Marketing & Advertising: It encompasses companies that are oriented to creating and delivering messages through media channels to promote products, services, or brands

JOB POSTINGS BY SOURCE WEBSITE

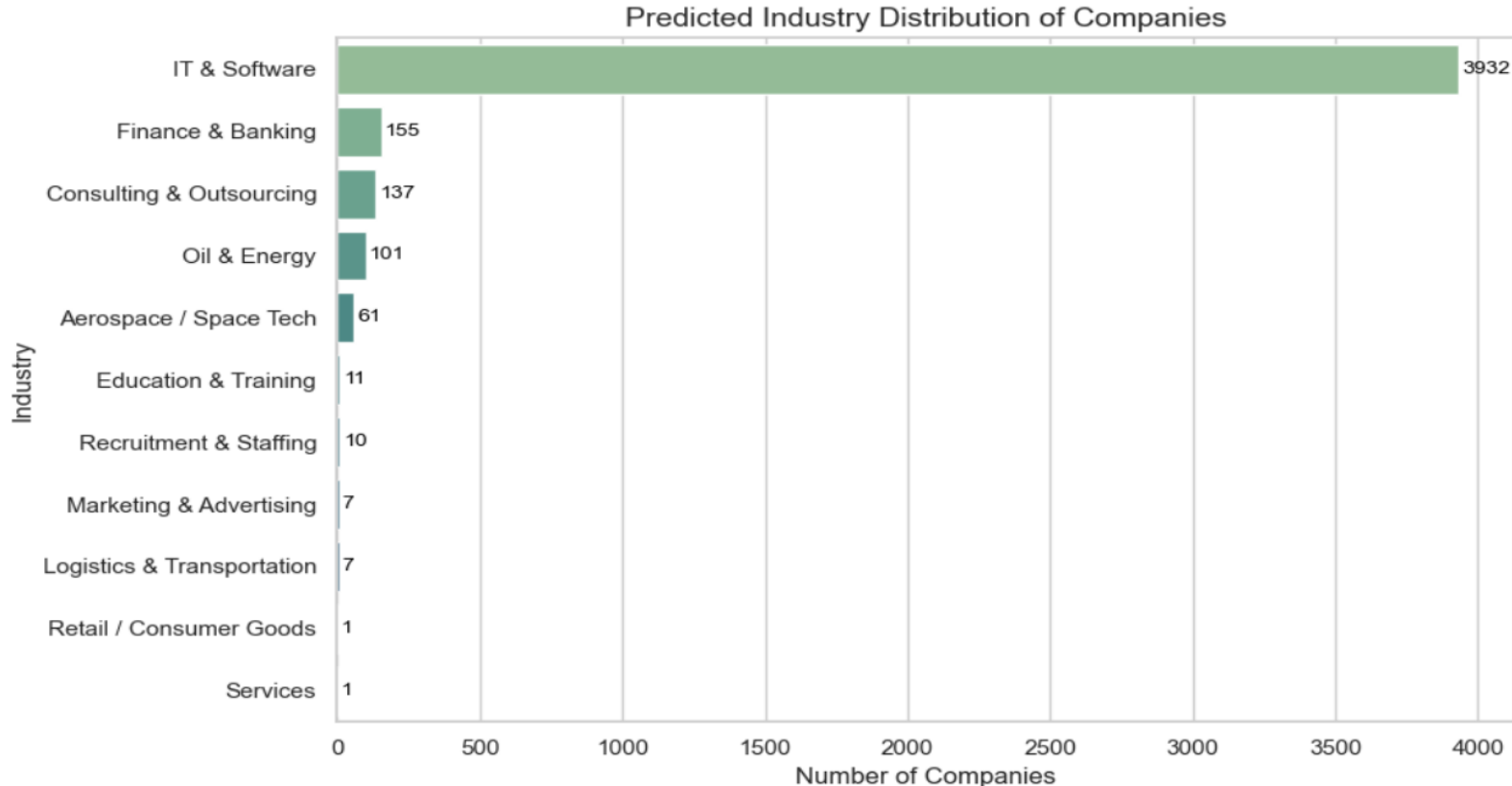


THE TOP 10 MOST FREQUENT JOB LOCATIONS FOR CRYPTOCURRENCES & BLOCKCHAIN TECHNOLOGY

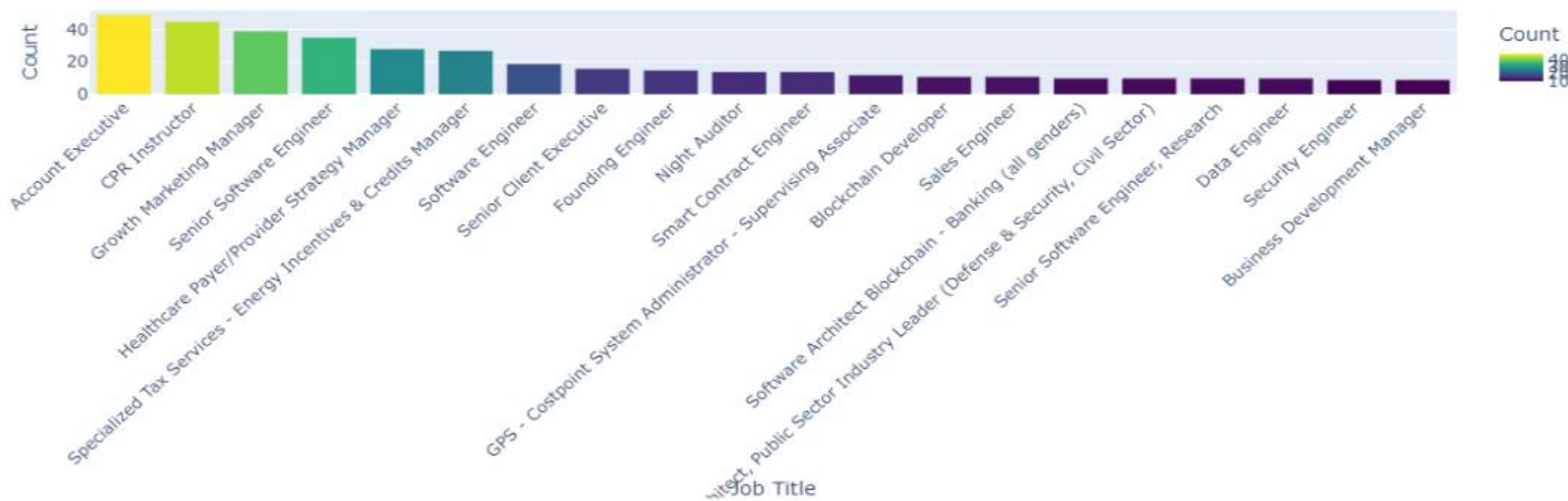


No China, no Russia

INDUSTRY DISTRIBUTION OF COMPANIES IN THE CRYPTOCURRENCY AND BLOCKCHAIN LANDSCAPE



TOP JOB TITLES WITH REGARDS TO CRYPTOCURRENCES & BLOCKCHAIN TECHNOLOGY



FINDINGS

Adoption is largely confined to specific sectors, primarily finance, consulting, and ICT, which forms concentrated clusters near major financial hubs.

Blockchain adoption is hindered not just by internal organizational issues, but also by ecosystem's readiness, regulatory uncertainties, and the lack of cross-sector collaborations,

The adoption of blockchain technology is not as a single decision, but as a continuous strategic process, which requires alignment between the internal capabilities of an SME and the external ecosystem support (Lustenberger et al. 2021, Zamani 2024).

DATA FROM REDDIT API

- What are the most discussed topics related to cryptocurrency and blockchain adoption and readiness by companies?
- What are the top companies, industries, and locations that are embracing cryptocurrencies and blockchain technology?
 - What does the future look like, in terms of discussions? Do the discussions for these topics tend to be in the positive, neutral or on the negative side?

REDDIT

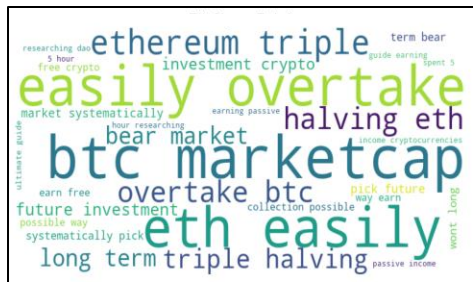
Incorporate user-generated textual data from Reddit

Reddit offers a rich repository of thematic discussions that reflect the skepticisms, reflections, and at the same time it offers the experiences from a broad community of users.

3,400 distinct Reddit posts and over 101,000 comment

REDDIT SENTIMENT & CLUSTERING

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FINDINGS - WHAT DRIVES ADOPTION

- **The data and the literature review confirm Theories: Adoption depends on ecosystem readiness, not just technical skills.**
- **Companies adopt when:**
 - They see competitive pressure
 - Regulators provide clarity
 - Partner networks signal momentum
- **Adoption stalls when companies face:**
 - Regulatory ambiguity
 - Lack of internal crypto literacy
 - Weak external collaboration

CONCLUSION AND OUTLOOK

RQ1: What industry-level trends can be observed in company adoption of blockchain and cryptocurrency technologies based on job demand and NLP classification?

The IT & Software, Finance, and Consulting sectors lead adoption, as shown by high job demand and role diversity. Companies like Coinbase, Ripple, and PayPal dominate hiring.

RQ2: What are the major barriers that prevent companies from adopting cryptocurrencies and blockchain technology?

The main barriers are ecosystem-related, not technical, such as regulatory uncertainty, lack of standardization, and weak external partnerships. Especially true for SMEs.

RQ3: What is the public sentiment and discourse around cryptocurrency and blockchain adoption by companies, on social media platforms like Reddit?

Sentiment is largely neutral, with clusters focused on market volatility, regulation, and competitive dynamics. Discourse is more informational than emotional.

RQ4: Which countries and regions show the most enterprise activity in blockchain and cryptocurrency job postings?

United States, India, and Germany are top adopters. Cities like New York, San Francisco, Berlin, and Frankfurt lead geographically. Remote roles are also prevalent.

REFERENCE LIST

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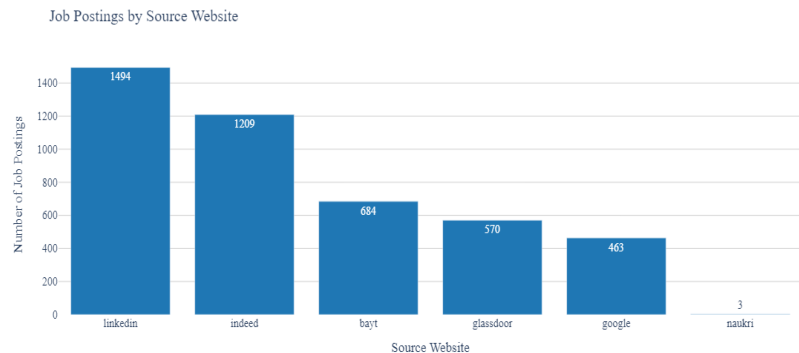
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OTHER FIGURES

The number of job postings based on the source website



Heatmap of the missing values in our jobs' dataset



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WHAT DRIVES OR DELAYS ENTERPRISE ADOPTION?

- For companies to be successful, Deloitte recommends that **they develop a clear implementation roadmap**, when first starting with **internal pilots**, which are often led by **Treasury departments**, in order to evaluate cryptocurrency's impact across the various department within the company. **A strong c-level suite leadership, interdepartmental collaboration**, and **strategic planning** are essential to manage this transformation in companies (Davis, 2025).
- A study by TUM has analyzed content from **around 1.4 million websites using deep learning** and **natural language processing to detect blockchain-related activity in the DACH region**. This research puts into highlight that the **adoption is largely confined to specific sectors, primarily finance, consulting, and ICT**, which forms concentrated clusters near major financial hubs. These cluster in real promote **innovation, collaboration, and startup activity**, which all of these factors are deterministic in reinforcing localized growth of the technology (TUM, 2024).

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WHAT'S MISSING IN THE LITERATURE?

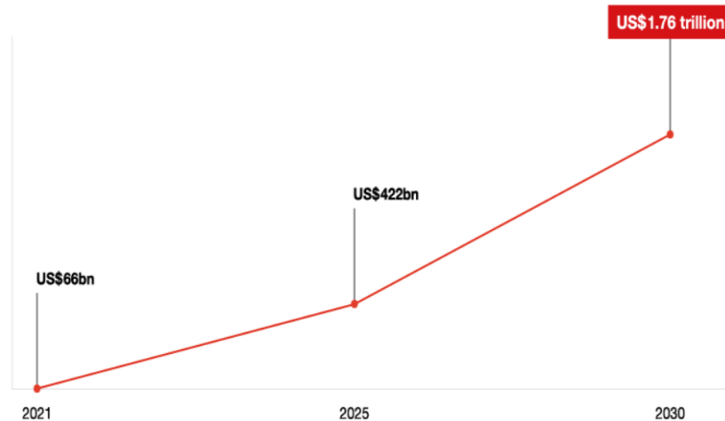
While existing studies have provided useful conceptual models, they tend to rely heavily on surveys or interviews, which are limited by self-reporting and sample bias.

- **Survey and interview-based studies dominate**
- **Geographical limitations (EU, U.S., single-sector studies)**
- **Scarce use of real-time signals (e.g., hiring data, social sentiment)**
- **Cryptocurrency adoption: Heavily understudied compared to blockchain**
- **Need for data science methods: NLP, scraping, clustering**

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FOUNDATIONS OF BLOCKCHAIN AND CRYPTOCURRENCY

The global economic impact of blockchain implementation



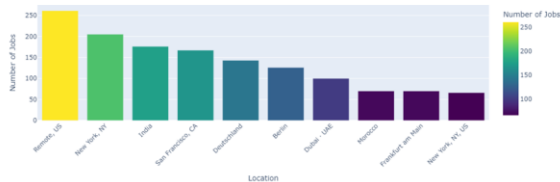
Adopted from (PricewaterhouseCoopers, n.d.)

- **PwC economists**, believe and predict that the blockchain potential will boost up to **1.76 billion-dollar by 2030**
- They show that the technology will be used by the vast majority of the companies around the world in the **next five years**

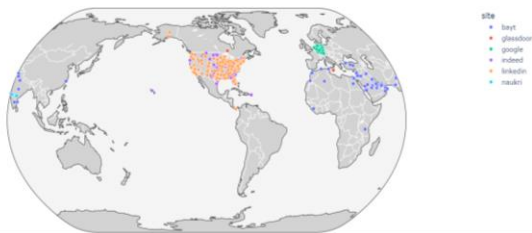
JOB MARKET ANALYSIS – WHERE IS ADOPTION HAPPENING?

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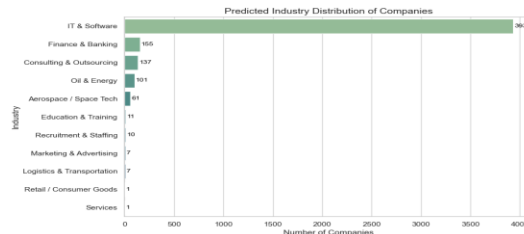
Top 10 most frequent job locations



2 Global Distribution of Blockchain & Crypto Job Postings by Site



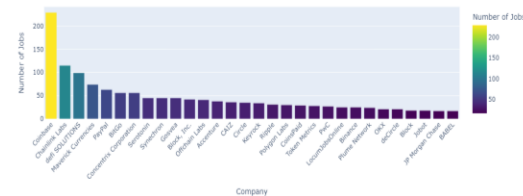
Top Industries: IT & Software > Finance > Consulting



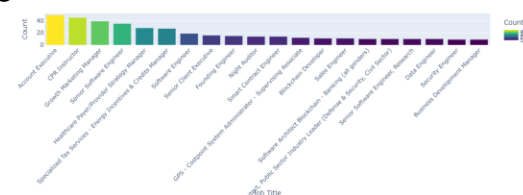
Strategic Roles: Product Managers, Compliance Officers

Top Companies: Coinbase, Ripple, Chainlink, PayPal

4 Top 30 Job Distribution by Company



5 Top Job Titles in Blockchain/Crypto



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WHAT DRIVES OR DELAYS ENTERPRISE ADOPTION?

- **TOE Framework**

- Technology: Internal infrastructure
- Organization: Leadership, skills, culture
- Environment: Regulations, market, partners

- **BAM (Blockchain Adoption Model):**

- **Ecosystem readiness** is the strongest adoption driver

- **Key Studies:**

- **(Lustenberger et al., 2021):** German firms adopt only when ecosystem matures
- **(Zamani, 2024):** SMEs lack ecosystem & collaboration support
- **(Davis et al., 2023):** "Hands-on vs hands-off" models in crypto adoption