# Emerging Technologies for Enhanced Enterprise Information Disclosure: A Review

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**Abstract**

In the current era of the sharing economy, emerging technologies, such as blockchain, artificial intelligence, cloud computing, big data, and the Internet of Things have been widely used in the field of business. This is promoting the new development of enterprise information systems. The study examined and analyzed three key aspects: fundamental quality requirements, enhanced quality requirements, and cost-benefit restrictions enterprise information disclosure. This review examines the transformative potential of emerging technologies in revolutionizing enterprise information systems practices. It has come to light that this synergy empowers enterprise information not only to accurately reflect reality but also to sustain its relevance, thereby achieving a harmonious balance between these two fundamental aspects.

**Keywords:** Emerging technologies, enterprise information disclosure, blockchain, AI (artificial intelligence)

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## I. Introduction

Presently, human development has entered the new era of Industry 4.0. This has led to a fundamental shift in the constraints of human social development owing to the progress and application of emerging technologies such as blockchain, artificial intelligence, big data, cloud computing, and the Internet of Things (IoT); these provide the basis for a new way of value creation. The burgeoning study of emerging technologies offers ample opportunities for theoretical and practical innovation within the field of business. Artificial intelligence, electronic invoicing, digitalization of economic operations, and the use of blockchain technologies are fostering trust among participants and enabling fair competition on a level playing field. These emerging technologies are reshaping the way organizations manage, disclose, and utilize information. This triggers new requirements for enterprise information from all users [Lazaroiu, et al., 2022; Jiang & McCabe, 2021].

The integration of emerging technologies and business presents the features of open sharing, the interconnection of everything, structural reshaping and innovation orientation. These emerging technologies are leveraging a wide range of data sources and advanced data collection, processing, analysis, and application technologies as they continuously transform the generation, dissemination, reporting, application, and management methods of enterprise information. Thus, this comprehensively improves the enterprise information disclosure [Mubarak & Petraite, 2020].

Emerging technological advances and the corresponding management system innovation are the keys to the sustainable growth of the country's overall economy. Enterprise information disclosure is a crucial factor in business management. It directly impacts an enterprise's ability to make scientific decisions regarding business management benefits and core competitiveness. Furthermore, it significantly influences the prospects for enterprise development. Emerging technologies have led to the diversification and personalization of enterprise disclosure of information in financial presentations. The development of intelligent business processing has become an unavoidable trend. The use of a comprehensive intelligent management mode can increase the efficiency of enterprise employees to process information and save time. Furthermore, the integration of work via the Internet of Things (IoT) not only diversifies the presentation format of financial reports, but it also enhances the timeliness of information. This facilitates the timely and accurate acquisition of pertinent enterprise information by information users [Kuznets, 1973; Liu & Zhang, 2017; Kondratenko, et al., 2022; Romero & Vernadat, 2016; Valentinetti & Muñoz, 2021].

The application of emerging technologies such as blockchain, artificial intelligence, big data, cloud computing, and the Internet of Things in the domain of business is anticipated to surpass the limitations of cost-benefit in the existing system of the quality attributes of enterprise information. This is expected to enhance the promptness, comparability, comprehensibility, and verifiability of information. Emerging technologies enable enterprise information to satisfy the two key quality requirements of truthfulness and relevance. The application of emerging technologies can efficiently integrate data with

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diverse economic features into an enterprise information system, hence enhancing the information's relevance. Furthermore, automated information processing and intelligent decision support are providing strong support to ensure the authenticity of information [Gallego - Álvarez & Pucheta - Martínez, 2022; Krichen, et al., 2022; Simaiya, et al., 2020; Guo, et al., 2020].

The use of emerging technologies in the field of enterprise information disclosure holds significant inventive value. This use is expected to result in a surge in practical application and a corresponding increase in research interest, both presently and in the future [Akter, et al., 2022]. Nevertheless, the existing study regarding the influence of emerging technologies on enterprise information disclosure remains insufficient. The majority of academics talk about the effects of a certain quality attribute of enterprise information from a single technological standpoint. This paper searches the literature on related topics through the Web of Science database to analyze the trend of temporal and spatial evolution of related literature. Additionally, this literature review also summarizes and organizes the literature in detail, according to the research content, as a way to further deepen research on the theme.

The research contribution of this paper is mainly reflected in two aspects. First, it enriches theoretical research on information quality. This study mainly discusses some new developments in the meaning of information quality requirements under emerging technology, which enriches the research system of information quality. Second, it enriches the theory of technological innovation. Emerging technologies are part of the enterprise development environment, and the application of emerging technologies has given new connotations to scientific and technological innovation in micro-management, in macroeconomics, and in the fulfillment of social responsibilities.

The structure of this paper is outlined as follows. The second section outlines the research method. This part summarizes the related theme literature and offers an explanation of the potential research prospects. The third section sets out the overview of relevant theories. The concepts and connotations of enterprise information disclosure and emerging technologies are summarized and analyzed. The fourth section of this study analyzes the influence of emerging technologies on enterprise information disclosure. In the fifth section, the challenges to improving the performance of enterprise information disclosure in the context of emerging technologies are studied. The sixth section analyzes the construction of an enterprise information standard system based on emerging technology. The seventh section is a discussion of the study. Lastly, a review of the key results and conclusion of the article are presented in the eighth section.

## II. Methodology and Descriptive Analysis

### A. Collection of Literature

There has been a significant increase both in scholarly study and in the practical application of emerging technologies. Emerging technologies are enhancing enterprise information disclosure; there is a growing body of study in the business field on these technologies. This study employs systematic literature review research method to investigate the enterprise information disclosure facilitated by emerging technologies including blockchain, artificial intelligence, big data, cloud computing, and the Internet of Things. The analysis is conducted using the Web of Science database, focusing on the temporal and spatial development trends of relevant thematic literature.

Based on the search conducted, it was found that a total of 233 articles about the topic of "enterprise information disclosure" were included in the Web of Science database. Considering the application of emerging technologies in the field of business, further searching with the keywords " enterprise information and blockchain, artificial intelligence, big data, cloud computing, Internet of Things", a total of 322 articles were found. Among them, it is found that a significant amount of the study literature pertains to blockchain technology. Specifically, there are a total of 101 papers, constituting 31.4% of the entire body of literature on the subject. Considering the potential for errors, a comprehensive search with the phrase " enterprise information and technology" yielded a total of 492 articles. Meanwhile, according to the knowledge graph of keywords in Figure 1, the research hotspots are distributed in " information, blockchain, technology, algorithms", etc., and the research objectives are "impact, future, business, service system, performance evaluation", etc. Hence, the investigation into the enhancement of enterprise information disclosure using emerging technologies is supported by a solid theoretical foundation in existing literature, thus rendering the research viable.

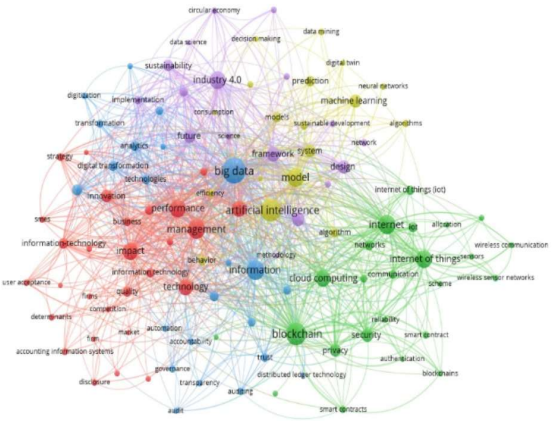


Figure 1. Keywords and Center Nodes

### B. Literature Analysis

#### 1. Temporal Variations in Research Topics

At this stage, the data undergoes visualization analysis. The research literature on "enterprise information disclosure " is mainly concentrated after 2010, increasing from 9 articles in 2010 to 25 articles in 2022. Meanwhile, with the development of emerging technologies, the research literature on "enterprise information disclosure + emerging technologies" is mainly concentrated after 2018, increasing from 28 articles in 2018 to

79 articles in 2022, with a growth rate of 182%, reaching a peak in 2022. The application of emerging technologies in the field of business is still a hot new topic, as evidenced by the 322 chosen scholarly articles, which garnered an average yearly citation count of 257 between the years 2013 and 2022.

Subsequently, a thorough analysis was conducted on the chosen 322 articles using the citation report. Additionally, the selected articles were further refined, considering the topic's relevance. Finally, 269 articles related to enterprise information quality and emerging technologies were selected. Meanwhile, according to Figure 2, it can be found that the studies on emerging technologies' empowering enterprise information were concentrated after 2019.

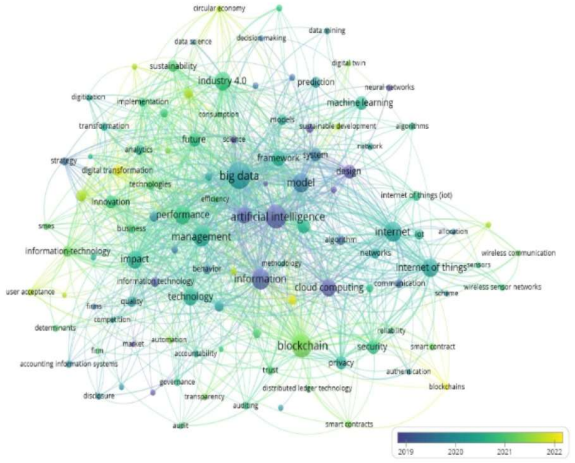


Figure 2. Knowledge Graph of Research Topics

The following table (Figure 3) shows the specific publication and citation volume of the relevant papers from 2013-2022.

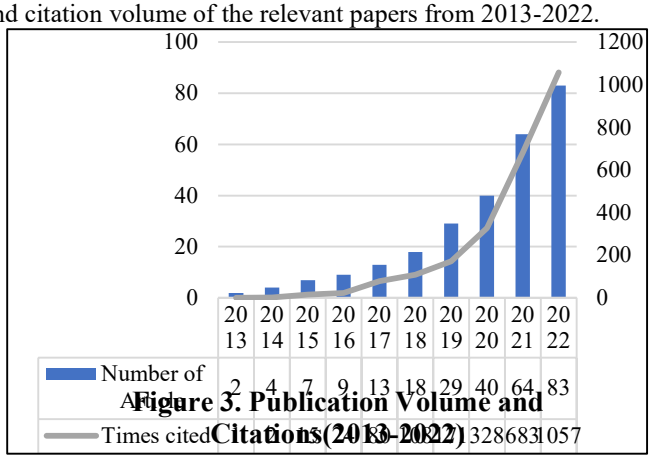


**Figure 3. Publication Volume and Citations (2013-2022)**

2. Distribution of Countries of Publication

Based on the analysis of the source countries of published literature, as can be seen in Figure 4, the top three countries in terms of publication volume are China, the United States, and England. This is directly tied to the mature enterprise information systems and robust new technological development in these three countries. Other countries with publications are Australia, Italy, and Spain.

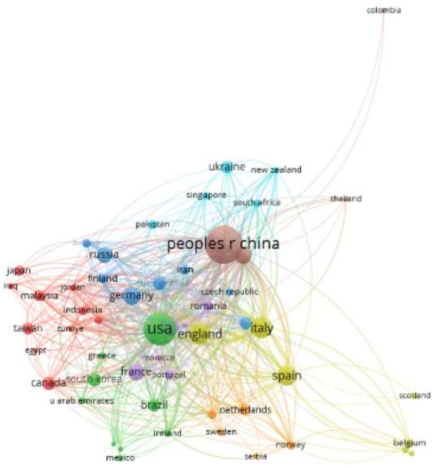


Figure 4. Countries of Publication

The following Table 1 shows the distribution of the Top 10 countries in terms of publications.

**Table 1. Distribution of the Top 10 Countries in Terms of Publications**

| Country/Region | Number of Papers | Proportion (%) |
|---|---|---|
| CHINA | 110 | 34.161% |
| USA | 67 | 20.807% |
| ENGLAND | 26 | 8.075% |
| AUSTRALIA | 20 | 6.211% |
| ITALY | 12 | 3.727% |
| SPAIN | 11 | 3.416% |
| CANADA | 10 | 3.106% |
| GERMANY | 7 | 2.174% |
| FRANCE | 7 | 2.174% |
| RUSSIA | 6 | 1.863% |

## III. Background and Theoretical Foundations

### A. Definition of Enterprise Information Disclosure

Enterprise Information Disclosure refers to the process by which an organization shares critical information, data, and reports with various stakeholders, both internal and external, in a transparent, accountable, and accessible manner. This disclosure encompasses financial and non-financial information, including but not limited to financial statements, operational performance metrics, sustainability reports, compliance data, and other relevant information that aids stakeholders in making informed decisions and assessing the organization's overall health and performance [Campanella, et al., 2021; García - Sánchez, et al., 2019; Ren, et al., 2020; Torres & Sidorova, 2019].

### B. Emerging Technologies Related to Business Scenarios

The application of emerging technologies has a significant impact on the enterprise environment and financial behavioral patterns, leading to a transformation in the ecosystem of

enterprise information and business processes. Emerging technology enterprise applications refer to the utilization of information and data technologies in the many operations of the enterprise, including recording, computation, reporting, and storage. The development of emerging technologies as part of the enterprise environment has a profound impact on the quality of enterprise information.

The technology economy and the booming sharing economy, as well as various emerging technologies including blockchain, artificial intelligence, cloud computing, big data, and the Internet of Things (IoT) have gained extensive utilization within the business field. Blockchain technology establishes trust among users, while artificial intelligence (AI) enables the rapid and efficient extraction of information. Cloud computing enables timely access to resources, and big data analytics ensure accurate processing of data. Additionally, the Internet of Things (IoT) realizes data integrity [Nguyen, et al., 2021; Fikri, et al., 2019; Pazaitis, et al., 2017; Ritter & Pedersen, 2020].

Blockchain is a type of technologically enabled ledger. The autonomous operating rules of blockchain can create trust for unfamiliar enterprise subjects (nodes). Blockchain has the potential to solve the information asymmetry problem by realizing public ledger record features like inerrancy, encryption, security, decentralization, openness and transparency, open sharing, traceability, etc. The recording, storing, and transmission of all transaction credits in the big data format across many computers and network nodes can be included in the category of enterprise information, with the generalization of the concept of enterprise information. However, with the arrival of big data in business, new problems, such as fraud in enterprise data, a declining trust in enterprise information, and the degree of data sharing being out of sync with the need for decision-making, have emerged. The blockchain, a pure technology, can synchronize transaction data across nodes between different databases; this is expected to solve many current difficulties in the generation of enterprise information [Centobelli, et al., 2022; Qiao, et al., 2022; Demirkan, et al., 2020].

Artificial Intelligence (AI) is an emerging technological science that researches and develops theories, technologies, and application systems used to simulate and extend human intelligence. It employs efficient data processing and data analysis techniques to investigate the ways in which computers might be made to perform intelligent tasks that, in the past, only humans could achieve. When AI is applied to the field of business work, AI incorporates the concept of big data and cloud computing technology to generate an intelligent system that combines humans and machines to replace manual bookkeeping and reporting. The enterprise information obtained is analyzed with the help of an expert system that simulates human thinking to support forecasting and decision-making. AI technology can considerably increase the accuracy and the timeliness of enterprise information, can decrease expenses, and further improve the level of financial management [Qu, et al., 2019].

Cloud computing is a technological system that enables the unfolding of efficient access to a predetermined shared pool of computing resources, notably networks or services. Cloud computing includes three main elements: software, platform, and infrastructure. In cloud computing, server locations and access patterns can be in different distribution models, such as on public, private, community and hybrid clouds. This allows enterprises and governments to choose the right cloud system, according to their demands, so that they may fulfill their information processing requirements. Cloud computing ensures that all stakeholders have access to up-to-date and accurate financial information. Also, cloud computing has gradually supplanted traditional financial software; cloud-based enterprise information systems offer the advantages of real-time collaboration and data centralization, decreasing data duplication and enhancing data consistency [Armbrust, et al., 2010; Ogiela, 2015; Wang, et al., 2021].

The term "big data" was initially introduced by in their publication titled The Age of Big Data. Big data refers to a collection of data on a very large scale, with a huge data volume and powerful process optimization capabilities. In contrast to conventional database software, "Big Data" has enhanced capabilities in terms of data acquisition, storage, analysis, and management. The emergence of "big data" provides strong technical support for enterprise artificial intelligence in data collection, statistical analysis, data mining, and other aspects [Wang, et al., 2022].

The Internet of Things connects objects to the Internet through various types of information-sensing devices, thus realizing the intelligent exchange of object information, positioning, and informatization management [Wortmann & Flüchter, 2015]. The Internet of Things is a product of the development of the knowledge economy, which highly combines physical objects and information, and which offers two major advantages. First, it realizes the direct correlation between physical objects and information data. The modern tracking technology has a significant qualitative improvement. This has enabled enterprises to benefit from advanced intelligent systems that assure the accuracy and reliability of information.

Consequently, the Internet of Things aids in decision-making processes and contributes to the enhancement of economic efficiency. Secondly, it enables the instantaneous processing of information and mitigates the influence of human data input. The Internet of Things (IoT) facilitates the synchronization of physical and informational updates, providing ease of management and enabling enterprises to handle data in real time. IoT devices provide real-time data streams that accurately reflect the use, status, and movement of material resources. The utilization of real-time data enhances the precision of asset assessment, depreciation calculations, and the efficiency of financial reporting [Santoro, et al., 2018; Valentinetti & Muñoz, 2021].

## IV. The Influence of Emerging Technologies on Enterprise Information

### Disclosure

This study utilizes the Conceptual Framework for Financial Reporting established by the International Accounting

Standards Board (IASB) to analyze the implementation of emerging technologies, including blockchain, artificial intelligence, big data, cloud computing, and the Internet of Things (IoT), within the business field. The objective is to assess the influence of these technologies on enterprise information disclosure. This study aims to provide a summary and analysis of the three aspects of enterprise information quality requirements within the context of "emerging technology + business". These dimensions include fundamental requirements, enhanced requirements, and the cost-benefit principle.

### *A. The Influence of Emerging Technologies on Fundamental Quality Requirements of Enterprise Information*

The fundamental quality requirements include relevance and truthful reflection, emphasizing that useful financial information must be relevant and consistent with its intention to truthfully reflect the content. The relative significance of relevance within the "information view" and truthfulness within the "measurement view" of enterprise information quality requirements has been a subject of ongoing scholarly discourse. Academics in the United States have placed significant emphasis on the key requirement of enterprise information being its relevance, but China has consistently prioritized the fundamental principle of truthfulness. However, via the profound integration of emerging technologies and business, the utilization of emerging technologies can realize the relevance and truthfulness of enterprise information [Liu, et al., 2022; Shin, 2019].

1. The Utilization of Emerging Technology Improves the "Truthful Reflection" of Enterprise Information

The requirement for truthful reflection of the quality of enterprise information means that, within the business process (namely information recognition, recording, measurement, and reporting), the company must rely on the actual occurrence of transactions or events. This is done to truthfully reflect the enterprise information in accordance with the established standards. The objective is to ensure that the resulting enterprise information is true, reliable, and comprehensive. Furthermore, it is crucial to fully disclose the authentic enterprise information to users, in order to provide them with reliable references for decision-making purposes.

As a result of the widespread adoption of financial software, enterprise information data has transitioned entirely to electronic formats. According to the research of relevant scholars, several factors have been identified as influential in determining the truthful reflection of enterprise information quality in the context of emerging technology. These factors can be seen from Table 2 including (1) the authenticity of the information object; (2) the information processing process; (3) the immutability of the enterprise data; and (4) the normativity to accounting standards. These are the links and the key elements of the enterprise information processing procedure that may affect the truthful reflection of the quality of enterprise information.

(1) Information Objects

Presently, businesses widely adopt multi-dimensional big data to describe enterprise information on a large scale. By combining blockchain technology with big data, businesses can enhance the authenticity of information by more comprehensively depicting and restoring the original form of economic operations. Within the realm of new technology, the economic business objective undergoes complete digitization. This process is facilitated by the utilization of the blockchain consensus mechanism, which ensures that numerous parties confirm the occurrence and processing of business activities. Meanwhile, the rise of cloud computing and the use of big data have made multidimensional, third-party computing and cloud storage a reality, providing the basis for the realization of enterprise information technology systems. Blockchain technology and big data will combine and co-evolve to create an evolutionary whole that includes the digital business items used in human socioeconomic activity [Akter, et al., 2022; Nguyen, et al., 2019; Vinoth, et al., 2022; Li, et al., 2020].

(2) Information Processes

Blockchain uses automated software technology for enterprise information processing, and the whole process of enterprise information encryption and hash calculation results in a blockchain-type data record which ensures the traceability of enterprise data. Furthermore, the authenticity of the data is verified through IoT technology, which improves the authenticity of enterprise data from the whole process [Velmurugadass, et al., 2021; Xu, et al., 2020].

(3) Immutable Enterprise Data

The technical advantages of blockchain information technology in business applications and information processing are manifested in decentralization. Information records are backed up and stored on the server nodes of all users, making it impossible for any single user subject to change the overall data; this can effectively inhibit most of the financial fraud. Big data technology overcomes the limitations of sample selection by using the overall sample to replace traditional random sampling; this significantly improves the representativeness of the sample and reduces the subjectivity of business personnel in sample selection. Furthermore, the expert system and pattern recognition system in AI will use financial data and system models to make reasoning and judgments to automatically identify false economic business information and related financial data; this will further improve the authenticity of enterprise information [Liu, et al., 2022; George, et al., 2014; Gray, et al., 2014].

(4) Accounting Standards

The implicitization of accounting standards is taking a new trend with smart contracts on blockchain. Accounting standards must be reformulated to include the new technology within the existing legal framework. All embedded procedures must be authorized and validated by the state. The business field has become fully intelligent and automated, due to the application of emerging technologies. Finance theories are increasingly implicitly embedded in the rules of distributed platforms; this will eventually result in the digital programming of the implementation of accounting standards [Qin, et al., 2021].

**Table 2. Relevant Literature on the Impact of Emerging Technologies on the Truthful Reflection of Enterprise Information**

| | | | |
|---|---|---|---|
| The Truthful Reflection of Enterprise Information | The Influencing Factors | The Technical Functions of Emerging Technologies | Articles |
| | The Information Objects | The Consensus Mechanism of Blockchain | Nguyen, et al., 2019 |
| | | Third-party computing in cloud computing | Vinoth, et al.,2022 |
| | | The Cloud Storage in Big Data | Li, et al., 2020 |
| | The Information Process | Blockchain message encryption and hash calculation | Velmurugadass, et al., 2021 |
| | | The recognition and management of objects for the Internet of Things | Xu, et al., 2020 |
| | The Enterprise Data | The decentralization of blockchain technology | Liu, et al., 2022 |
| | | The data Selection for Big Data | George, et al., 2014 |
| | | Expert systems in artificial intelligence | Gray, et al., 2014 |
| | The Accounting Standard | Blockchain-Based Smart Contracts | Qin, et al., 2021 |

2. The Utilization of Emerging Technology Improves the "Relevance" of Enterprise Information

The relevance of enterprise information disclosure refers to its capacity to sufficiently fulfill the requirements and inherent expectations of those who utilize such information [Rayo & Segal, 2010]. Enterprise information that is deemed relevant should have either predictive support value, decision support value, or both. Predictive support value implies that the information can assist users in making future predictions, while decision support value refers to the information's ability to offer feedback or guidance on previous predictive estimates. As can be seen in Table 3, the relevance of enterprise information disclosure in the context of emerging technologies primarily depends on the extent to which enterprise information aligns with the requirements of information users, the decision-making utility of enterprise information, and the predictive capabilities of enterprise information.

(1) Emerging technologies will better match enterprise information with the needs of information users

In the current epoch characterized by the Great Intelligence Cloud, the accessibility of information has significantly increased. The public ledger of the blockchain enables enterprise information to be truly and fairly accessible to the general public. A blockchain that is collectively maintained enables information users to function as information producers. Each information user is more likely to independently express their interests and needs in the production process of information in a unique general ledger [Gorkhali, et al., 2020]. Enterprises can obtain various forms of data, whether structured or unstructured, according to their needs, and can analyze them to help them make decisions. According to [Sanad & Al-Sartawi, 2021], data mining technology can enable enterprises to gather useful information, leading to more timely and more accurate financial reports that can enhance the relevance of such reports to the financial situation of the firm.

(2) Emerging technologies enhance the decision-support value of enterprise information

The application of emerging technologies enhances the whole societal decision-making efficiency of enterprise information. The application of emerging technologies shortens the chain of recording, reconciling, and reporting of enterprise information. It simplifies the process of transferring information, reduces a variety of costs and regulatory difficulties, and improves the efficiency of enterprise information processing [Blankespoor, et al., 2020]. Therefore, the application of emerging technologies effectively reduces the zero-sum game generated by enterprise invalid information, and the total social wealth realizes effective Pareto improvement. On one hand, the distributed ledger decreases the marginal cost of getting information for users. Blockchain accomplishes the replication of business record data by applying the Paxos algorithm, which minimizes the error rate of records backed up across multiple information subjects and enhances the marginal efficiency of enterprise information. On the other hand, the application of emerging technologies enables open, real-time, transparent, and shared enterprise information, which achieves a separating equilibrium in the economy. This is the key to emerging technologies' ability to make the decision-making of information users more effective [Bamakan, et al., 2020; Seele, 2016].

(3) Emerging technologies enhance the predictive support value of enterprise information

Under the trend of the era of comprehensive upgrading of emerging technologies, enterprises need to have a keen information processing ability to cope with the huge and rapidly updated information group. In the highly competitive market, this capability may help enterprises stay competitive. With the use of artificial intelligence, cloud computing and other technologies, enterprises can improve the efficiency of information processing, consequently enhancing the enterprise information disclosure and accurately predicting the direction of market development. Big data leverages strong information retrieval technology to quickly identify market needs, to combine structured and unstructured data, and to build a comprehensive information collection and statistical system. A structured prediction and decision-making system are further built to improve the accuracy of prediction and decision-making [Gill, et al., 2019; Awotunde, et al., 2021].

**Table 3. Relevant Literature on the Impact of Emerging Technologies on the Relevance of Enterprise Information**

| | The Influencing Factors | The Technical Functions of Emerging Technologies | Articles |
|---|---|---|---|
| The Relevance of Enterprise Information | The extent to which enterprise information matches the needs of information users | The Public Ledger for Blockchain | Gorkhali, et al., 2020 |
| | | Data Digging | Sanad & Al-Sartawi, 2021 |
| | The value of enterprise information decision support | Artificial Intelligence Automation | |
| | | The blockchain Paxos algorithm | Bamakan, et al., 2020 |
| | The value of enterprise information forecasting support | Big Data Information Retrieval Techniques | Gill, et al., 2019 |

*B. The Influence of Emerging Technologies on the Enhanced Quality Requirements of Enterprise Information*

The enhanced quality requirements include comparability, verifiability, timeliness, and understandability. While these enhanced requirements can improve the usefulness of enterprise information, they are not necessary to make enterprise information useful. The essential condition is that enterprise information must adhere to the fundamental quality requirements, including the requirements of truthfulness and relevance. If the enterprise information already meets the fundamental requirements and is subject to the limitations of the quality requirements, the enhanced quality requirements can be further optimized to increase the usefulness of enterprise information [Renkas, et al., 2015].

1. The Utilization of Emerging Technology Improves the "Comparability" of Enterprise Information

When analyzing the comparability of enterprise information, it is possible to adopt two distinct viewpoints: horizontal comparability and vertical comparability. Horizontal comparability refers to the need to ensure that, when comparing the disclosure information of different companies, the calibers on which they are based are consistent. Vertical comparability, on the other hand, refers to the fact that the same or similar economic transactions of the same company at different points in time should be treated by consistent standards. The core principle of comparability lies in adhering to and correctly implementing financial methods and processing procedures which should not be changed arbitrarily [Romito & Vurro, 2021]. There are many factors affecting the comparability of enterprise information, accounting standards [Yang, et al., 2018], information asymmetry [Tan & Saraniemi, 2023], internal control of enterprises [Liu & Guo, 2023], and so on.

In the context of emerging technology, information records are completed by a third party through a consensus mechanism. The business function has been replaced by the automated execution of information processes facilitated by technology. Big data analysis is used in the decentralized platform's operation to oversee the information system's implementation by the government, shareholders, boards of directors, etc. The utilization of emerging technologies enhances the oversight of enterprise information, thereby it essentially resolves the issue of inconsistent information [Yang, et al., 2018]. Furthermore, in practice, there exists an information asymmetry between the information producer and the user. Information producers, who possess a substantial amount of information, influence the generation and dissemination of enterprise information based on their comprehensive understanding of the transaction.

This, in turn, diminishes the comparability of enterprise information and then triggers moral hazard. The principle of blockchain technology by third-party bookkeeping helps to reduce the problem of information asymmetry and further improves the comparability of enterprise information [Tan & Saraniemi, 2023; Goldsby & Hanisch, 2019]. Finally, the application of emerging technologies will trigger significant changes in the way in which enterprises operate and manage their business, including breaking traditional organizational boundaries, changing internal and external contact methods, and achieving system interconnection and data sharing. This will drive enterprises to adopt smart contracts, form new organizational structures, improve internal control, and provide basic conditions for the comparability of enterprise information [Murray, et al., 2021].

2. The Utilization of Emerging Technologies Enhances the "Verifiability" of Enterprise Information

As an important sub-requirement of truthfulness, verifiability is essential to reducing the risk of fraud and to the auditing process, particularly in capital markets where disclosure quality is often inadequate. In the past, information in the enterprise information system was fragmented, and information involving economic phenomena was dispersed among different intra-enterprise systems, leading to difficulties in verifying the relationship between information. The business application of emerging technologies has improved the information-sharing mechanism, generating a comprehensive chain of interconnected enterprise information, hence simplifying the validation process of enterprise information [Si, et al., 2019].

An advanced enterprise information system has been developed by integrating blockchain, artificial intelligence, big data, cloud computing, and the Internet of Things. This integration significantly improves the capacity to verify enterprise information. On the one hand, a new generation of ledgers that integrate blockchain, IoT, and other technologies can guarantee the security and the validity of the content data and the documents that they include. By utilizing blockchain technology to record inventory information and by employing IoT to track the historical track of inventory, electronic invoices,

shipping bills, and other related documents, it is becoming possible to monitor the real-time data of these documents and to ensure their authenticity [Wu, et al., 2019].

In addition, smart contract technology can be used for quick verification of transaction records according to established standards, realizing real-time verification of enterprise information. On the other hand, artificial intelligence and data analytics techniques can extract valuable information from unstructured big data. This information can be used to validate enterprise information from different perspectives; for example, the authenticity of sales operations can be verified by reputation information on social media [Lone & Naaz, 2021; Gupta & George, 2016].

3. The Utilization of Emerging Technologies Enhances the "Timeliness" of Enterprise Information

The concept of timeliness on enterprise Information refers to the prompt recognition and recording of economic transactions during the relevant business period, without any undue acceleration or delay. The recognition and reporting of information are essential during the process. In the conventional method of information processing, the enterprise's information is dependent on the transmission and communication between various departments. However, this approach is incongruous with the information disclosed by the industry in the market, thereby constraining the relevance of enterprise information. This asymmetry of information affects the quality of decision-making in enterprises, which brings potential risks and adversely affects the survival and development of enterprises [Martínez-Ferrero, et al., 2015]. Hence, the significance of emerging technologies in enhancing the timeliness of enterprise information becomes evident.

On the one hand, the utilization of big data technology in constructing a financial sharing platform enables the prompt processing and dissemination of enterprise information. This platform can simplify the internal information transfer process, enhance the efficiency of information circulation and work productivity, and optimize the internal operations of the organization to ensure the timely availability of enterprise information. On the other hand, blockchain technology aims to realize the integration of business and finance, so that transactions and bookkeeping are carried out.

Blockchain technology has the capability to eliminate the need for intermediaries and centralized institutions to authenticate through timestamps. This enables the seamless movement of assets and value while it concurrently facilitates the transmission of information. Upon recognizing this integration, blockchain technology combines with big data to achieve full codification of enterprise information data processing with high speed, high efficiency, and high accuracy. The integration of artificial intelligence is employed to achieve complete automation in the process of collecting enterprise data. The application of emerging technologies makes the collection of enterprise information in a timely manner [Wang, et al., 2020].

4. The Utilization of Emerging Technologies Improves the "Understandability" of Enterprise Information

Enterprise information quality requirements' comprehensibility refers to the need to classify, organize, and describe enterprise information in a clear and concise manner so that it is easy for investors and other users of financial reports to understand and use. Nevertheless, the existing standardized financial reports provide a challenge due to their extensive and complex material, making it difficult for users of information to effectively comprehend economic management phenomena [Sanad & Al-Sartawi, 2021].

The emerging technologies facilitate the generation of several types of financial reports, encompassing both structured and unstructured data. The use of visualization tools has become crucial for preventing information overload and for enhancing the comprehensibility of enterprise information. The rise of big data has driven the development of visualization tools. These tools can present complex analysis results in an intuitive and understandable way, presenting enterprise information through graphs, images, and animations to make it easier to understand and use. Furthermore, by use of data linkage, individuals have the ability to track the sources and changes in information; this helps in understanding enterprise information in greater depth [Pigatto, et al., 2023].

### *C. The Impact of Emerging Technologies on the Restrictive Requirement of the Cost-effectiveness of Enterprise Information*

The generation, analysis, and reporting of enterprise information are closely related to costs. Rational producers of enterprise information must ensure the alignment of expenses with the corresponding benefits of reporting. However, it is challenging to effectively meet the needs of both users and producers of information. Consequently, taking into account general considerations, producers of information may prioritize certain features over others. However, the concurrent advancement of emerging technologies brings the possibility of the overall enhancement of various enterprise information quality requirements. On the one hand, technological advances reduce the cost of enterprise information production infrastructure. On the other hand, the marginal cost of information production in the enterprise information system of "emerging technology + business" tends to be close to zero. Hence, the utilization of emerging technologies in the field of business serves to mitigate the constraints associated with the cost-effectiveness of enterprise information [Pizzi, et al., 2022].

## V. The Challenges to Improving the Performance of Enterprise Information Disclosure in the Context of Emerging Technologies

Although the performance of enterprise information disclosure has greatly increased due to emerging technologies, there are still some challenges to overcome. These include concerns about privacy, data security of enterprise information, and the appropriate employees to receive training and skill development to use these tools efficiently.

### *A. The Issues with Data Security and Privacy Protection of Enterprise Information*

In the process of digitalization, the diversification of

information channels and the low cost of information falsification make it easy to produce false information and damage the interests of enterprises. It is challenging to assess the authenticity of enterprise information in the market using big data technologies. On the one hand, the features of the Internet make it difficult to judge the accuracy of data related to enterprise information by providing information that can be quite cumbersome to users.

Enterprises need to disclose information according to the regulations but, in the case of the popularization of emerging technologies, if the enterprise's firewall technology is not in place, it may be subject to cyberattacks, leading to leakage of core business secrets and leading to losses. Furthermore, some persons or organizations may reveal business information in the network environment arbitrarily due to bad motives or for other reasons, disregarding the significance of enterprise information [Glikson & Woolley, 2020; Cheng, et al., 2017]. Thus, with new technologies, there are issues with data leakage and security pertaining to enterprise information.

### *B. The Enterprise Employee for Emerging Technologies*

With the development of emerging technologies, access to information in the business field has become more diverse and abundant. The enterprise staff can collect and mine data through a variety of channels, but this also increases the burden of screening and judgment on information users. Because a large amount of information needs to be effectively organized and screened, there is a higher demand placed on the ability of employees. It is necessary to be able to accurately locate and extract valuable information and to quickly screen the information needed.

The way in which enterprise information is processed has also changed in the era of big data, and the enterprise staff must adjust to new ways of processing, including dealing with data of different types and complexity, understanding deep relationships between data, and applying data to higher-level decision-making forecasts. These challenges require staff to continuously improve their information processing and analytical skills.

### *C. Imbalance Development of Emerging Technologies the Information Cycle's Processing*

The information process cycle is shorter, and the enterprise data is more extensive. The utilization of emerging technologies has resulted in the improvement of individuals' capacity to acquire information. Additionally, the substantial volume of data related to procurement, transactions, and settlements, which affects the rules of enterprise operation and the order of market operation, makes information processing pay more attention to transactional Information. In the context of the dramatic increase in the amount of enterprise information, a large amount of transactional data is generated; this increases the demand for information users to calculate and understand the source of information on access to goods.

In this instance, the financial reporting cycle of firms is abbreviated, facilitating enhanced comprehension of an enterprise's condition and bolstering investor confidence in making investment decisions. Nevertheless, the current accounting cycle, which includes monthly, quarterly, semi-annual, and annual reports, is no longer suitable for the modern era characterized by high-frequency transactions and vast amounts of data. Furthermore, it fails to establish an effective feedback mechanism between users of information and enterprises. Consequently, there is a need to reassess and modify the information process cycle [Arvidsson & Dumay, 2022].

## VI. Analysis of the Construction of an Enterprise Information Standards

System Based on Emerging Technologies

The establishment of a new-generation system for standardizing enterprise information has become essential for enterprise sustainability as a result of the growth of emerging technologies. The enterprise information standardization system covers three links: enterprise information collection, enterprise information processing and transmission, and enterprise information disclosure.

First, a unified database is developed as a crucial tool to fulfill the standardization of information collecting. Next, data processing and transmission work is carried out in the enterprise information database with the help of cloud computing technology. Finally, to improve the degree of information sharing and provide enterprises with more timely and valuable information, the financial information, and the information of other departments in the enterprise are integrated using blockchain [Haghighat, et al., 2015].

Moreover, Big data, IoT, and other technologies are also being used to combine, contrast, and analyze an enterprise's internal and external data to completely comprehend the overall situation of the industry and optimize the decision-making ability. In addition, Extensible Business Reporting Language (XBRL) has also been applied to the construction of enterprise information standardization systems in recent years. The XBRL contains classification standards and innovative elemental forms of relevant data which are capable of recording and transmitting more complex economic business information [Vasarhelyi, et al., 2012].

Finally, to improve the overall quality of enterprise information and to enable it to play a positive role, a platform for standardizing enterprise information should also be set up with an enterprise internal control information communication system and continually optimized enterprise internal control system construction. Enterprise managers may optimize the financial management order via the ongoing enhancement of the internal control system, which enables them to carry out certain controls as well as the prevention of financial fraud.

## VII. Discussions

This paper offers an optimistic outlook on enterprise information disclosure based on emerging technologies. The study demonstrates that emerging technologies have the potential to lead the practice boom in enterprise information, business trust, and the public ledger. Emerging technologies

will have disruptive innovations in theory and in practice for the future of business. However, the existing literature statistics show that the research on exploring emerging technologies in the business field is still in the initial stage; there is no molded theoretical foundation of enterprise information disclosure with emerging technologies to provide reference.

Moreover, it is worth noting that emerging technologies have, indeed, enhanced the overall quality of enterprise information. However, it is important to acknowledge that these advancements have not entirely revolutionized the preexisting framework of enterprise information quality requirements. In general, the trend of emerging technology-enabled businesses will not change. The emerging technologies aim to realize the transformation of the value of enterprise information. The following two aspects need to be emphasized in future research.

Technology is a double-edged sword, and whether it can perform its functions depends on the subjective purpose for which people apply it. For enterprises, the interests of emerging technologies in enhancing the transparency of enterprise information conflict with their interests in the protection of commercial confidentiality and privacy security; this may hinder the construction of an enterprise information-sharing system. Furthermore, the utilization of emerging technologies for intelligent gathering, analysis, and dissemination of enterprise information will have a significant impact on the decision-making process of information users. However, it is important to note that the ultimate outcomes of decision-making mostly rely on the cognitive abilities of the users themselves. Furthermore, it is worth noting that users of enterprise information often heavily depend on the enterprise information intelligence system. Moreover, information users may rely entirely on the enterprise information intelligence system, which lacks comprehensive analysis, and which may easily lead to the risk of being misled [Mazurek & Małagocka, 2019].

In terms of the main body, it is imperative for technical managers, enterprise authorities, tax authorities, and stakeholders to actively enhance the innovation of information management methodologies. The company's technology managers should develop internal control systems that are compatible with emerging technologies. The supervisors should learn from the "regulatory sandbox model" to change from passive supervision to active guidance. [Alaassar, et al., 2021].

## VIII. Conclusion

The development and the innovation of emerging technology trigger changes in the theory of enterprise information disclosure and in the innovation of business application of emerging technology integration. This paper is based on the emerging technological viewpoint on the requirements of enterprise information disclosure. The findings of the research show the following beneficial effects: it effectively solves the problems of low trust between the two parties in economic activities, information asymmetry, rent-seeking, financial fraud, untimely access to information for managerial decisions, low investor acceptance of financial reports, and expensive audits. It creates an open, transparent, secure, and non-manipulated information recording and contracting mechanism. Additionally, it facilitates the realization of enterprise data transparency, the synchronous updating of enterprise data, enterprise data sharing, lower information processing costs, and increased economic operation efficiency; last but not least, it fosters theoretical advancement and development of current data and information in the management information systems.

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