An Evaluation of the Financial Impact on Business Performance of the Adoption of E-Business via Blockchain Technology

Zecheng Yin, Chemical Geology and Mine Bureau, Geology Institute of China, China

Yu Yang, Shanxi Coking Coal Group Co., Ltd., China*

ABSTRACT

Investors can learn a lot about the health of a firm by looking at its FP (financial performance). For investors, it offers a glimpse into the company's financial health and performance, as well as a forecast for the stock's performance in the future. Certain criteria, including liquidity, ownership, maturity, and size, have been linked to financial success. Blockchain provides several benefits in the logistics business, including increased trust in the system owing to improved transparency and traceability and cost savings by removing manual and paper-based administration. The study uses the FP-BCT technique, a new approach to measuring company performance. However, e-business helps expand data exchange, aspects, and data quantity. Improving processing capabilities impacts the macroeconomic and financial environments, reducing economic activity, ensuring timely implementation of information, and decreasing costs.

KEYWORDS

Blockchain, Business Performance, E-Business, Financial Impact

OVERVIEW OF BUSINESS PERFORMANCE OF THE ADOPTION OF E-BUSINESS

E-business refers to the administration of businesses conducted over the internet, extranets, webs, and intranets (Kusmantini et al., 2021). Consumer and technical support and help can be provided through the internet while purchasing or selling items and services online (Kabrilyants et al., 2021; Melović et al., 2021). Yet e-business, closely tied to e-commerce, includes more than just online transactions for purchasing and selling goods and services (Nwaeze, 2021; Amelia & Syukmayettil, 2021). Digital information and contemporary communication technologies can speed up many organizational operations (Xie et al., 2021; Wynn & Olayinka, 2021). Due to blockchain technology, new business models can be created, and whole industries reshaped (Sumaryanti et al., 2021). Blockchain will increase business units' trust, accountability, protection, and privacy by providing a distributed and decentralized directory (Pollák & Markovič, 2021). A blockchain is akin to a register or a widely distributed ledger, in that it can store a large range of attributes (Yacob et al., 2021). Most of the time,

*Corresponding Author

these particulars are linked to financial transactions and personal identifiers (Zhong et al., 2021). By discovering and optimizing business process results, blockchain improves operations (Măiţă et al., 2021; Priambodo et al., 2021). Profit is the goal of a company's innovation process. New sales possibilities, increased revenue on current platforms, time savings, and improvements in efficiency and performance are all examples of how the advantages of blockchain could be realized (Shaikh et al., 2021). Most service providers use a third-party blockchain and its underlying consensus process. Providers make money via transaction fees for sending data over their networks. Additionally, they disperse tokens that they have created.

The smart contract can be utilized for event-driven processes in blockchain technology (Rahman et al., 2021; Bakeer & Albaour, 2021). When an event specified in the contract occurs, the accompanying circumstances will cause the contract to carry out predetermined actions once the agreed-upon transaction terms have been deployed on the blockchain platform (e.g., transfer of assets or realization of a transaction) (Goraya et al., 2021). Digital forms of cryptocurrencies have embraced the smart contract, and blockchain technology is employed as a means for capital exchange in a distributed network. This is a departure from the norms of financial transactions. Transactions utilizing cryptocurrency are recorded and maintained in a public digital ledger, and the parties involved execute the transactions directly without the need for a third party.

One of the most typical locations to do e-business is through online stores or the marketplace (Suprapto, 2021). The finest e-commerce solution would rely on the organization and the target market. Under the umbrella of e-business, digital information and communication technologies can assist and enhance corporate operations (Habíboğlu et al., 2021). Data exchange through the internet for commercial transactions is called e-business. A subset of e-business is e-commerce, which deals with the online exchange of goods and services. Businesses, organizations, and consumers all participate in commerce to some degree. Businesses and consumers alike can benefit from e-commerce by using information and communication technology to engage with each other. When an organization's internal or external networks perform various value chain functions, the organization's demands are considered.

In this paper, e-business refers to transactions exchanging products and services electronically. Cost reductions, competitiveness, and a more efficient production process help to increase productivity and broaden the range of possibilities.

Organizations need to realize that threats to their online businesses have strategic ramifications, and take suitable measures to eradicate or significantly minimize these worries. Due to the development of countermeasures; namely, cybersecurity; consumers can buy with confidence. As cybercrime affects online consumer trust, corporations need to develop models that allow them to measure the effect of cybercrime and adapt by using the latest cybersecurity innovations. Security measures must be created to prevent consumers from abandoning online purchasing due to these concerns. To combat these issues, businesses should develop a comprehensive cybersecurity program that includes a governance system with roles, procedures, accountability measures, well-articulated performance targets, and, most importantly, a cultural transformation. Blockchain may provide superior security measures for such needs by using the public key infrastructure (PKI) to verify identities and encrypt data transmissions.

- Blockchain is a contemporary technology that can provide the platform for developing new business models never before imagined.
- In particular, business models that eliminate mediators in an ecosystem of stakeholders, and those that emphasize security above performance, are relevant.
- Many sectors are negatively affected by this shift in companies' business strategies.
- Transacting directly between trade partners is made possible by existing blockchain technologies in the financial services sector.
- Aside from these advantages, the blockchain provides a safe, fault-tolerant, robust, and permanent platform for consumers to track their assets and resolve transactions autonomously.

Section 2 of this paper describes related work on e-business. Section 3 summarizes the proposed study that has been utilized in this paper. The simulation outcomes and discussion are described in section 4. Finally, section 5 provides a detailed discussion of the observations and outcomes.

RELATED WORK

The financial performance of e-business is shown by a thorough literature evaluation of peer-reviewed research.

Hierarchical Advance Soft Computing Techniques

This study has focused on the influence of marketing strategies and chosen business models on sales and profitability on a smart city platform to assess the cumulative effects of a specific policy or e-commerce model. E-commerce performance in many areas of the smart city platform can be evaluated using Hierarchical Advance Soft Computing Techniques (HASCT) (Xu et al., 2021). In addition, HASCT uses unrelated regression models in e-commerce to assess the relative importance of various strategic components. The marketing strategy's overall adaptability is determined by the indirect influence of sales on profitability. According to the numerical findings, the suggested HASCT approach improves forecasting of customers' purchasing habits.

Applied Holistic Mathematical Model

One of the most-often utilized mathematical models in applied research is the AHMM (Applied Holistic Mathematical Model). The planned AHMM formalism seeks to mimic human cognitive processes, such as the heuristic decision-making approach, employing empirical methods that rely heavily on beam examination (Trad, 2021). The unique characteristic of this technique is that the AHMM provides a comprehensive way of unbundling, the synchronization of numerous principles, and transformation strategies in support of initiatives for business transformation.

Transaction Cost Economics

Given the current changes in online consumer behavior, every company's strategy should improve the e-buyer experience and build client loyalty. In this study, transaction cost economics (TCE) and marketing research come together to illustrate how online retail transaction cost elements influence e-buyer satisfaction and loyalty (Tsikirayi, 2021). Consumers who were brand loyal could be better served by TCE, which could be enhanced by focusing on the value of asset uniqueness and unpredictability.

Information and Communication Technology

Contextual components determine the operating environment of a company. They investigate the market's information and communication technology (ICT) infrastructure, legal framework, and economic factors (De Meyer-Heydenrych & Struweg, 2021). It was determined that the managers and owners of the sampled enterprises were the most important sources of information and expertise for their organizations. To produce future techno-literate generations, institutions should demand that students get hands-on experience with ICT.

Small and Medium-Sized Enterprises

Businesses will use the internet to conduct their operations in the age of globalization and fast technological advancement. Small and medium-sized enterprises' (SMEs) internal preparedness considerations play a crucial role in determining whether or not they plan to implement e-business. Small and medium-sized enterprises (SMEs) have a major impact on the intention of implementing e-business in SMEs because of the external preparedness elements of SMEs (Prabowo & Yuniarty,

2021). Results show that technical expertise, competitive business pressure, and the preparedness of business partners all play a role in the adoption of e-business by small and medium-sized enterprises. Customers' e-business adoption intentions were unaffected by organizational or customer preparedness.

Blockchain has great promise for the future of the financial industry and the internet. The banking industry requires digital transformation and the implementation of measures that facilitate the widespread use of blockchain technology. As a result, we investigate the impact of technology adoption on the dynamics between marketing strategy, operational innovation within the workplace, economic conditions, and the moderating effect of IT alignment. The results demonstrate a robust connection between digital company strategy and process innovation, and the workplace's financial success. Blockchain technology deployment mediates the relationship between digital corporate strategy, enhanced operational efficiency, and bottom-line outcomes. Financial performance using blockchain technology has been proposed to overcome the existing technology to improve the business. FP-BCT has recommended improving reliability, satisfaction, growth, behavior analysis, and risk management.

PROPOSED METHOD: FINANCIAL PERFORMANCE
USING BLOCKCHAIN TECHNOLOGY

Blockchain is a data collecting technique that makes it difficult or impossible to change, hack, or cheat the system. Every machine on the blockchain has a copy of the blockchain's digital ledger directory. The use of blockchain technology for non-financial purposes, such as supply chain management and digital identification, is increasing. Blockchain might be used in fields other than finance. Blockchain technology has the potential to battle fake drugs and track the origin of food-borne diseases. Governments may use it to facilitate the exchange of information or to keep track of property. The distributed ledger technology known as blockchain has the potential to facilitate the development of novel forms of egalitarian organizational structures. According to a recent study, blockchain technology improved the system architecture of many Internet of Things (IoT) devices.

Many consumers will not realize how important IoT, blockchain, and artificial intelligence (AI) are to each other; instead, they tend to focus on one or the other. These advances will and should be executed simultaneously and will converge in the future. A possible relationship between IoT, blockchain, and AI could be that IoT collects and feeds data, blockchain offers the technology, and AI improves processes and regulations. These three innovations complement the architecture, and when combined, they can be utilized to their fullest potential. The convergence of these technologies can be particularly useful for data processing and the automation of business processes.

Figure 1 shows financial performance using blockchain technology. Blockchain can manage industrial transactions involving exchanging resources between buyers and sellers. Supply chain transactions between consumers and many suppliers are the primary role of the blockchain in this approach. The decentralized order engine and the decentralized product engine allow customers to create fresh demand and producers to provide new items as part of a new transaction. Sharing data about raw materials, manufacturing lines, procedures, and real-time logistics is facilitated by blockchain data management. Better data collection and administration have made product recalls possible using blockchain, which aids in efficient internal planning. Commercial off-the-shelf technologies couldn't always provide the desired degree of security. A mission-based approach to security can be tailored to meet specific needs. The accounting standard used by the individual or group responsible for generating these financial statements affects the value of both the assets and the liabilities. The techniques of depreciation, the amortization of assets, and other aspects like these are all up to the individual discretion of the person utilizing these assets. As a result, these approaches cannot be declared in the financial reports, and restrictions are placed on them. Data on an organization's network can be better protected if a bespoke layer of security is added. Suppliers and consumers can use smart contracts to verify and protect the data patterns used in their interactions with one another. Commercial off-

Figure 1. Financial Performance Using Blockchain Technology
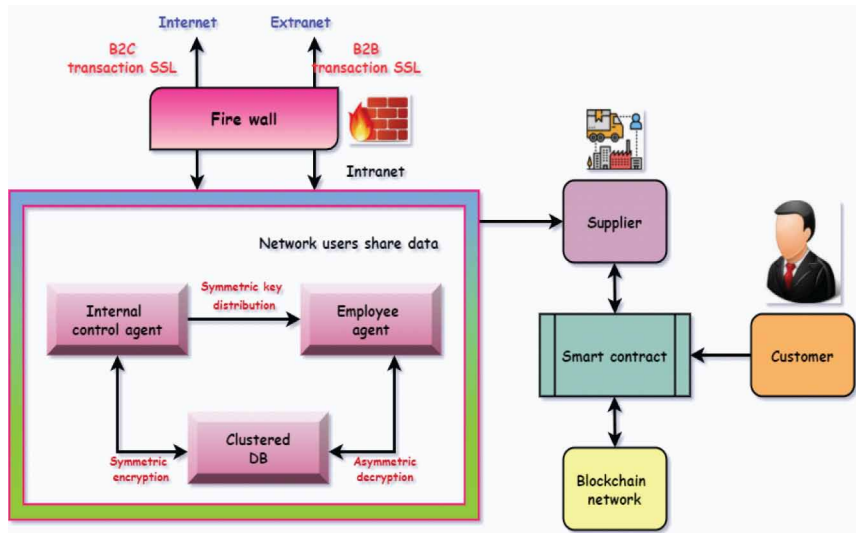
the-shelf technologies can't always provide the desired degree of security. A mission-based approach to security can be tailored to meet specific needs. Data on an organization's network can be better protected if a bespoke layer of security is added. When it comes to the key generation settings, the employee's agent (EA) will be responsible for monitoring and setting the frequency of key creation.

Only one database cluster at a time can have access to an approved EA. Encryption is performed on the data before it is sent to the database. Only the authorized workstation has access to the data, since each cluster is encrypted using a unique key. The firewall can allow data from the internet or extranets when the ICA receives it. The ICA defines the secret key that should be used for symmetric encryption. During the processing step, symmetric encryption generates encryption data. Passwords can be used to store both personal and business account information.

The personnel of the ICA is responsible for the day-to-day operations of the organization. In addition to location and account balance, EAs can be assigned to a certain account. In the transmitting state, the ICA sends the encryption data to the connected EAs. The ICA uses a secret key to encrypt data collected from external networks, and clustered databases store data that the ICA writes. In the workplace, employees are responsible for their company accounts. To share data with other company members, the sender encrypts it using the recipient's public key and decrypts it using the recipient's private key. Internal illegal access is protected by this additional degree of authentication.

Figure 2 shows the factors influencing the adoption of e-business. Integrating information technology into e-business models and business processes to investigate the extent to which it may contribute to achieving business objectives is the goal of Information Systems Management (ISM). Possible sub-topics include creating and implementing information systems (IS) for electronic commerce and supply chain management, marketplaces, and new business scenarios made possible by newly developed technology. The submissions must be based on a business plan and indicate how that strategy may be operationalized utilizing information technology.

E-commerce has been changing the way consumers across the globe make purchases. As early as the twentieth century, a new approach to conventional selling was developed. E-business, a new technology-based economy, and a path toward disintermediation from marketing channels were launched by the notion of linking global vendors and purchasers over the internet. Because of this, disintermediation was eventually reversed by firms like eBay and Amazon when they emerged.

Figure 2. Factors Influencing the Adoption of E-Business
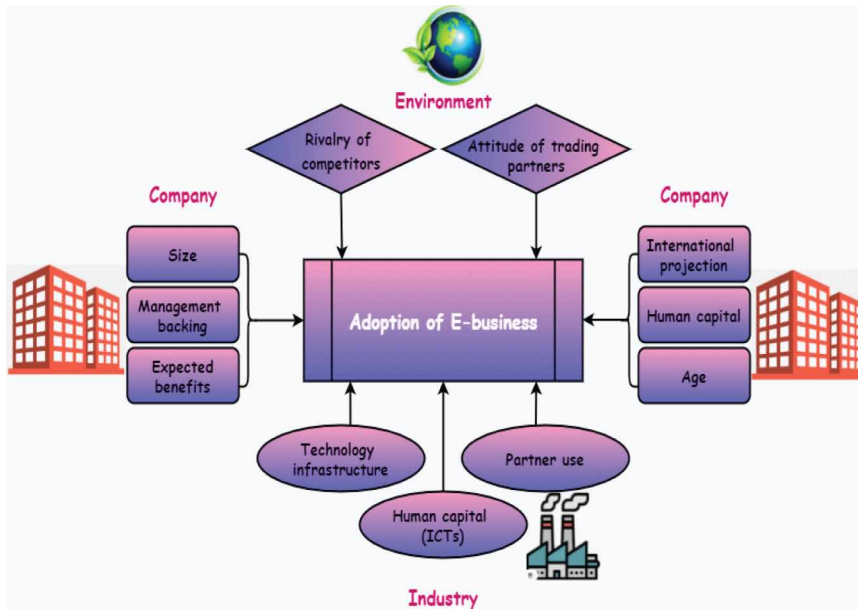
Brick-and-mortar merchants began to embrace this new online channel with the rise of pure-play dot-coms. With sluggish acceptance throughout the world, it evolved rather than revolutionized the retail industry. However, e-business has lately become a deep force in changing the marketing channel and strategy in B2B and B2C sectors.

Although individuals in wealthy nations have made use of the advantages of e-commerce, those in developing countries have not yet had the opportunity to reap the benefits of this technology. Because of differences in consumer preferences, corporate innovation, information structure, and national legislation, the adoption of e-commerce differs across national borders. In developing economies, social, cultural, technical, legal, and political considerations are seen as the most significant impediments to e-business adoption. E-commerce adoption's cultural and socio-cultural barriers include a lack of internet expertise, inadequate credit card processing infrastructure, language barriers, and security and privacy concerns.

It is established by turnover, balance sheet total, and average number of workers that a firm is large enough. For example, public companies and certain financial services organizations are small or medium-sized enterprises, not micro-entities. Smart contracts are computer programs executed on top of the blockchain, based on the parties' rules in advance. When these conditions are accomplished, the agreement is finalized and immediately comes into effect. For instance, you may agree to pay your components vendor 40% upon shipment, 50% upon delivery, and 10% upon quality inspection. These business rules may then be fed into blockchain technology, which can track and enforce compliance with the contract terms. Digital assets associated with the contract will be automatically distributed to the provider when each job is completed. Smart contracts have gained appeal because of their lower cost of negotiation, implementation, and assessment, as well as their increased accessibility, confidentiality, tamper resistance, and reduced need for third-party engagement.

The production elements are organized by management, and the resources are assembled and organized, then integrated efficiently to fulfill objectives. Group activities are directed toward predetermined objectives. Competition amongst contemporary enterprises is reflected in this metric. The intense competition might lead to price reductions, increased advertising costs, or increased

spending on service/product upgrades and innovation as an outcome. It is essential to the improvement of living circumstances, the creation of employment, and the widening of consumer options that international trade plays a role.

Privacy difficulties $R(n)$ have risen when web cookies τ capture and maintain personal information u in data structures. $R(n)$ is defined as:

$$R(n) = \frac{\tau_1 + lmu_{kt}(z)}{u^{0.5}} \sqrt{lmu_{kt}(z)\tau_1} \tag{1}$$

As shown in equation (1), $lmu_{kt}(z)$ indicates an innovation factor for business site optimization and reflects the enhancement of the factor. Blockchain technology has gained widespread attention for its security benefits to the online retail industry. It facilitates direct dealings between individuals and reduces reliance on third parties. Quicker transactions, fewer chargeback frauds, verified customer evaluations, and individualized product recommendations are just a few of the perks we enjoy. Blockchain ensures clients can monitor their products from beginning to end because of its immutability. People can verify the legitimacy of items and monitor the status of their purchases in real time.

Transactions between businesses $G(u)$ that take place through the internet are referred to as e-commerce, and are described as:

$$G(u) = WG(u-1) + UZ(u) + D(u) - R^{(u)} \tag{2}$$

As shown in equation (2), $D(u)$ represents the response of the system, whereas $WG(u-1)$ and $Z(u)$ reflect its previous state. Structural matrix properties in e-commerce serve as fixed values $R^{(u)}$ for simple implementations.

E-commerce adoption in many developing nations is hampered by a lack of personal computers, internet penetration, and unreliable postal systems. There is a lack of trust, advantages, security, expertise, and a high cost to e-business adoption in many nations worldwide. A country's level of development and the interplay of these variables might help or hinder the spread of e-commerce. There is a large retail presence for developing nations, which acts as a hindrance to e-commerce adoption. It's a simple and efficient method of keeping data secure while transmitting across a network. Information is encrypted by the sender and can be decrypted by the intended recipient using the same or a different secret code. Data signed digitally is guaranteed to be genuine. Simply put, a digital signature is an electronic signature verified using encryption and a password. A security certificate is employed as a unique digital ID to confirm a person's or website's authenticity.

Figure 3 shows a company's financial and accounting performance. Companies in the industrial sector use e-commerce as a platform for electronic transactions. Groups of organizations can operate more efficiently by pooling their purchasing and selling efforts, sharing market data, and doing regular inventory checks. Productivity is defined as the gap between a company's declared goals and its actual production (or goals and objectives). Specialists in various sectors, including strategic planners, management, finance, legal, and organizational development, are concerned with organizational performance. Financial performance measures how successfully a company can use its principal way of operation and thus make profits. Managers and investors use financial performance to assess firms in the same field or the whole business or sector. The capacity of a company to offer goods or services to clients in a cost-effective manner is known as operational performance. This study aims

Figure 3. A Company's Financial and Accounting Performance
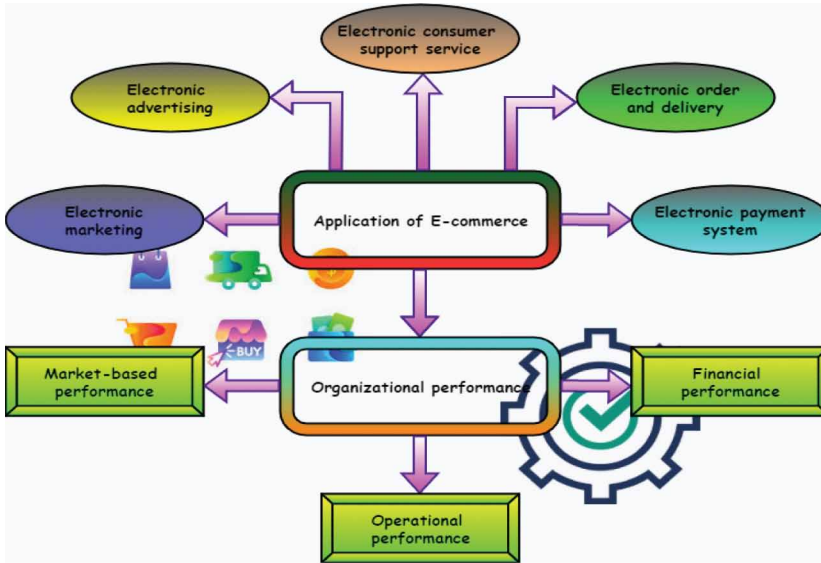
to determine whether blockchain technology has improved the effectiveness of international trading firms' internal processes. There is a considerable reduction in operational, agency, and time expenses. Business processing times and cross-departmental productivity increase with blockchain's use, while reliance on middleman agencies for international commerce and payment settlement is reduced.

Sales revenue, market share, profitability, competitive advantage, consumer happiness, and loyalty are all indicators of a company's success. Transactions or payments can be made without checks or money using electronic payment systems. Online or electronic payment systems are often referred to as e-payment systems. E-orders are orders produced and transmitted by email or other electronic means. Sending EDI (electronic data exchange) messages is an electronic order. Ordering, delivery notice, and billing are all automated using these electronic communications. With the integrated electronic consumer support features, users can discover what is causing system-detected hardware and certain software malfunctions. Each new transaction created by blockchain is encrypted and connected to the previous one. It is very secure, prevents data from being manipulated, and reduces the likelihood of hacking.

Business information A_{rt} has typically been segregated from marketing strategy by transaction models K_m and techniques S_m to gathering account statements are stated as:

$$A_{rt} = \sum_{m=1}^{l} D\left(y_l, (r+1), H_m\left(S_m\right)\right) + K_m \tag{3}$$

As shown in equation (3), accounting records D allow consumers to evaluate the applicability of a given accounting assessment model y_l by adding relevant data H_m into the report r.

For optimum acquisition of information P, the deviation coefficient H_r is regulated by the value coefficient, which is background information in link-variable set theory. H_r is defined as:

$$H_r = \frac{\sum_{k}^{l=1} z_k - T_k}{\sum P^{0.5}} - \left(B - u_1\right) \tag{4}$$

As shown in equation (4), B denotes the optimization of the model's dependability that this essay proposes an improved methodology for measuring z_k, and this is because the prior method does not guarantee the accuracy T_k of subsequent operations; instead, this article proposes a layer-by-step test mode.

Funds H_u from consumers who have saved can be routed to those who need it most through the securities industry Z_d, given as:

$$H_u = \frac{\sqrt{\mu\tau\left(1-\vartheta\right)}}{\left(\vartheta-1\right)\sqrt{\mu\tau\left(1+\vartheta\right)}} - Z_d \tag{5}$$

As shown in equation (5), a network of files $\mu\tau$ can be shared to maintain transactions ϑ in an orderly fashion and connect them to the data structure.

Advertisements that utilize the internet and other digital media to promote and sell products or services are called electronic advertising. Using numerous digital platforms and channels, a firm can advertise and promote its brand, product, or service. Actions taken on websites, social media, blogs, and applications are all included in this category. Internet and World Wide Web-based computerized environments are used to expedite trades and meet consumers' needs through e-marketing. However, comprehensive tactics enable organizations to maximize their expenditure by merging online and offline operations under the umbrella of e-marketing. An e-marketing plan should not be treated as a stand-alone or an afterthought.

Figure 4 shows the business's security infrastructure. It can be difficult for corporations to comprehend a security architecture. A variety of standard security techniques protect the enterprise's

Figure 4. The Business's Security Infrastructure
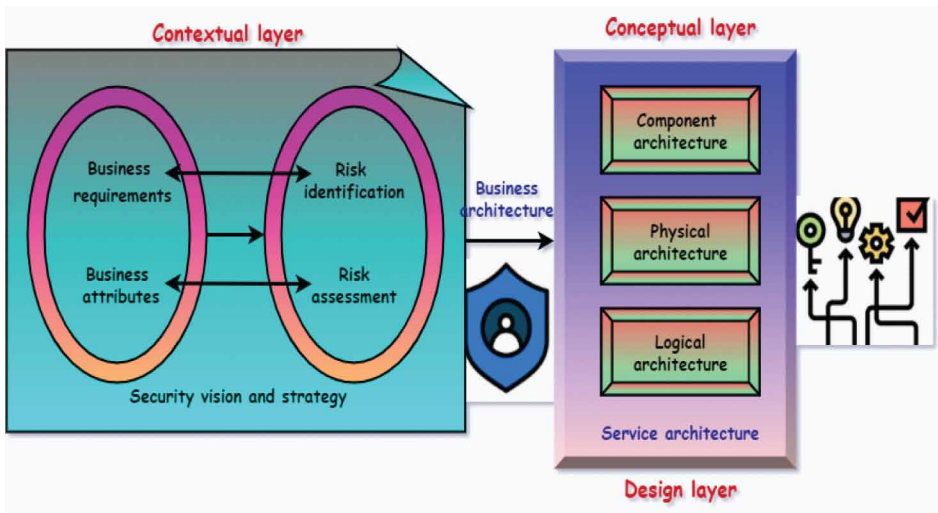
infrastructure and applications. Controls such as rules and processes can enhance the security architecture of certain companies. Many experts see it as a set of policies and procedures for strategy. The landscape has changed regarding security, and there are many new potential dangers. As new technology and business possibilities emerge, companies are rethinking their business models, such as connected devices, to take advantage of them. All security specialists must understand a business's objectives and work to aid them by implementing suitable controls that can be clearly conveyed to stakeholders and are directly linked to the business's risks.

Some considerations should be made while creating an e-business design. It is important to consider various elements, such as customer loyalty, organizational structure, the ratio of in-house production to outsourcing, and how to sell and distribute goods. A global schema—which identifies all of an environment's distributed parts—contextualizes it, and data mapping methods and access routes are maintained in a worldwide catalog. In the business sector, it is referred to as business architecture. These opinions and their links to strategies, goods, policies, and activities are presented comprehensively.

Technology h has changed old trading tactics, reduced the need for traditional mediators, and established new electronic intermediaries. It is defined as:

$$h = \sqrt{1 - d'} \left(\frac{2 + d}{d^2 + 1} \right) - \sum e_l \qquad (6)$$

As shown in equation (6), the findings from the centralized operation d serve as a foundation for the last step, which leads to e_l: the performance of the mating procedures and the value produced by automation.

If e-security measures have a greater effect than projected, consumer loyalty E and online sales $\left(x \mid \sigma - 1, \mu \right)$ can rise, given as:

$$E \left(x \mid \sigma - 1, \mu \right) = \mu x^m \left(1 - \sigma \right) + M \frac{tx_m}{tk_m} \qquad (7)$$

As shown in equation (7), μx^m indicates demand and behavior, the context of online purchase σ. To calculate each patch M in the workspace, the manufacturing process tk_m is taken into account tx_m.

Respect for a product or brand's overall excellence $g^{(n)}$ is closely linked to its perceived constancy $Z(n)$, stated as:

$$Z \left(n \right) = Q^{(n)} - \left(y^{(k)} + z^r g^{(n)} \right) / Jkr_l \left(d \right) R_k \left(d \right) \qquad (8)$$

As shown in equation (8), $Q^{(n)}$ denotes the exponential decay function, $y^{(k)}$ indicates the mistake rate that follows in the overall company production z^r can be adjusted to get value. A distinct estimate $Jkr_l \left(d \right)$ can be built by using the matrix to derive web coefficients for the consumer $R_k \left(d \right)$.

A service-oriented architecture (SOA) enables communication across different systems to collect services. It is a set of software components that help a company perform essential business functions. The term *component architecture* refers to a design strategy in which an application comprises self-

contained building blocks that can be reused. As a consequence of employing components, code fragmentation is reduced, and development speed is increased. It is simpler to see and communicate the application's logical and functional components with a logical architecture that depicts its future state. Documents outlining a country or organization's key security threats and plans for dealing with them are compiled regularly.

Figure 5 shows customer satisfaction in the business sector. Online retail business aims to provide customers with more convenient, individualized, and competitive products and services by utilizing the internet's interactivity and individualization. The goal is to lower trading costs and increase customer satisfaction and customer loyalty at the same time. The business-to-customer internet consumers' mental qualities are summarised as follows: Consumption efforts are rising, and adverts have a minimal impact on online use, since consumers tend to be reasonable. The internet is a common source of information for consumers who need to purchase. These consumers research and compare information about the items before putting orders to purchase at the last minute. Consumers' mental stability is lower. There is a lesser degree of customer loyalty and stability in today's fast-paced times, as consumers face a market that is both incredibly rich and constantly updating.

Desiring to make life easier and more efficient, customers can acquire what they want, whenever and wherever they want, because of the web's unrestricted access to time and space. Consumers are looking for a clear and straightforward website, a quick and comfortable purchase method, and a prompt and speedy shipment when they do online shopping, because of today's fast-paced culture. Price and quality are the main goals. In e-commerce, product prices in the web market are cheaper than those in the traditional market, since the internet helps businesses save a lot of display and circulation costs. As a result, customers' price sensitivity in the online market seems to be greater than in other markets.

The focus must be on the customer experience. Sellers must design their websites and offer customer support from the buyer's perspective, because of the unique nature of online consumption, such as that buyers can only learn about products through photographs and descriptions. From the time a consumer opens an e-commerce website until they complete a purchase, several actions must be taken to avoid losing customers. There are two types of satisfaction: pleasant and dissatisfied.

Figure 5. Customer Satisfaction in the Business Sector
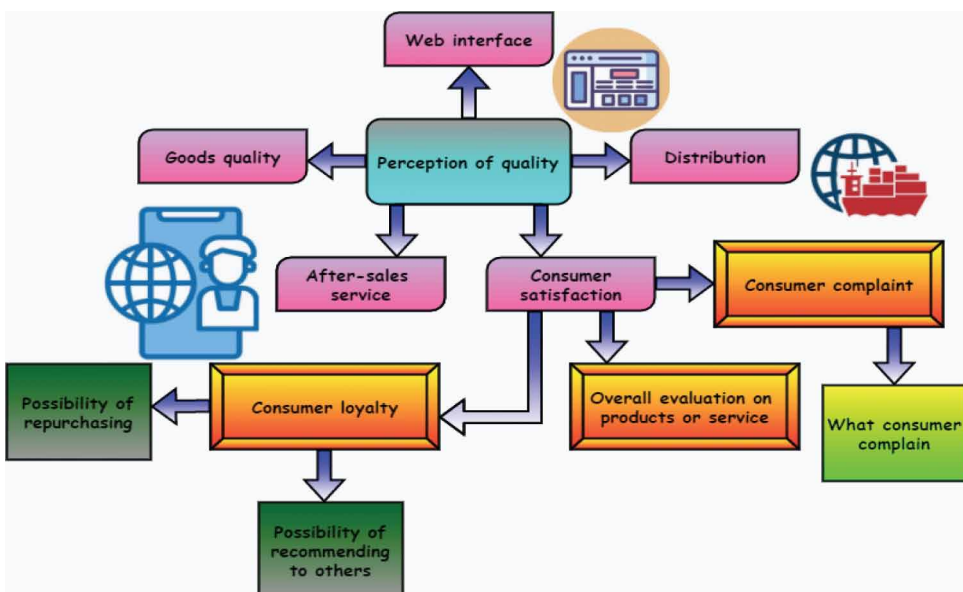
The first is when someone compares their perception of the product to their expectations, and the second is when they are satisfied. The consumer will be dissatisfied if the perceived impact is lower than expected, and the consumer will accept their purchase if the perceived result equals or exceeds expectations.

The internet's expansion has prompted academics to investigate customer happiness in an online setting. The selected methodologies and models are almost identical for conventional customer satisfaction, with little difference. Based on the analyses of business-to-customer online consumers' psychological traits, they examine the steps involved in purchasing and using goods and services. They reveal that several aspects contribute to customer satisfaction and several causal relationships. FP-BCT has developed a B2C e-commerce consumer satisfaction model based on past research and thus increases reliability, satisfaction, growth, behavior analysis, and risk management.

RESULTS AND DISCUSSION

Customers can find a product they're interested in by going directly to the retailer's website or using shopping search engines to explore e-businesses with the same product availability and price from numerous merchants. Buying online can be done on a laptop, tablet, or smartphone at any time. There has been an increase in data storage capacity due to cheaper processing and more internet connectivity. Whether you're transferring data or making a purchase over the internet, it's almost impossible to avoid it nowadays. Organizational collaboration is greatly aided by information technology, both within and between companies. Many businesses have improved their efficiency by pooling resources and sharing data because of the emergence of modern information technology. The findings point to a rise in intra-company sales due to the prevalence of e-business.

Improved productivity at work and a more cooperative staff as a result. Internal organizational performance is influenced directly by external performance and indirectly via extra-organizational interaction.

Table 1 shows the reliability of the system. The blockchain generates a digital record by integrating data from platforms and hardware, allowing independent parties to communicate data throughout the network. It's a worldwide network of distributed data/transaction chunks. The blockchain's blocks may include any kind of information or data. This digital ledger is a peer-to-peer network that uses consensus techniques and eliminates the requirement for external or internal resources to validate record keeping. It eliminates intermediaries from data verification or authenticity and allows end-users

Table 1. Reliability of the System

Number of Consumers	HASCT	ICT	FP-BCT
10	59	64	76.5
20	42.4	63.5	82
30	57	60	78.9
40	59	73.6	84
50	48	63	77
60	52	68.9	92
70	54	65	92.3
80	49.7	73	93
90	51	71	89
100	56	74	98.7

to communicate directly with each other and the network. This reduces transaction costs for all parties. The trust mechanism is experiencing a new change phase in the financial system. However, blockchain immediately enhances system design dependability. Decentralization and incorruptibility are two of the most important technical aspects of blockchain. Decentralization is at the heart of blockchain technology. As a distributed database, blockchain relies on no central authority to function, allowing it to be both transparent and pseudonymous at the same time. Numerous nodes can participate in the consensus protocol to facilitate peer-to-peer transmission. Consequently, a decentralized system is typically more reliable than a centralized one regarding security.

E-business has grown in recent years, owing to the widespread availability of advanced e-business platforms combined with mobile apps, which have remodeled organizational structures and how value is created. At the same time, technological advancements have changed the nature of brand promotion, allowing for more extensive coverage and specific targeting to boost credibility and commitment among consumers. Owing to the internet, marketers may now generate more interest in their products, expand into new areas, and sell their wares online. This adaptive approach to the market uses cutting-edge tools to refine its focus on individual buyers. This article shows how blockchain technology may be seen as incremental innovation that strengthens the consumer-centric model. Additionally, blockchain technology encourages disintermediation, helps fight click fraud, builds trust and transparency, provides increased privacy and security, and paves the way for novel loyalty programs.

Figure 6 shows the consumer satisfaction ratio. Various items are available for purchase through online sellers and firms that sell their goods over the internet. It is crucial to note that consumer happiness does not guarantee a repeat purchase. Loyal consumers are an essential commodity in today's competitive marketplace. The most fundamental aim of a consumer loyalty survey is to gather information from consumers that can be used to create effective marketing efforts. Quality and pricing are regularly on the minds of consumers.

Consequently, companies seek to establish consumer loyalty by offering reasonable rates for various goods. FP-BCT found that 98.9% of organizations enhance discussed consumer satisfaction ideas. It can be found in various ways, and it's often tied to the quality of the products or services being sold. This has a huge effect on consumer choices and is quite personal.

Table 2 shows the growth of e-business. From purchasing and selling, to customer service and payment processing, to production management and exchanging information with business partners,

Figure 6. Consumer Satisfaction Ratio
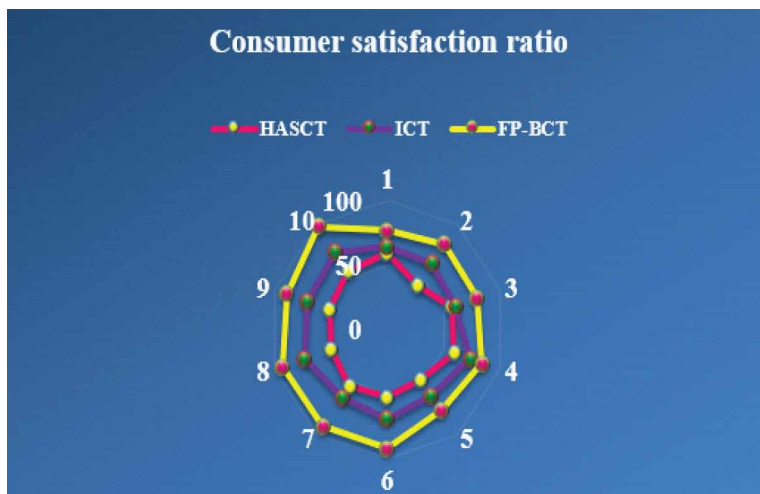
Table 2. Growth of E-Business

| Number of Consumers	HASCT	ICT	FP-BCT
2016	64	75	82
2017	70	83	95
2018	68	78	89
2019	60	86	90
2020	71	89.4	91
2021	54	81	97.9

a wide variety of firm tasks can be performed electronically. E-business is described as creating systems or business tools that automate company processes. Consider the sort of company and how it is run as part of an e-business growth effort. Compared to 2016, the proposed plan boosts e-business by 97.9% in 2021. The e-business technology industry has grown rapidly in the past several years. Modern businesses rely on technology to get an advantage over their competitors.

For businesses, blockchain technology reduces the time and money spent by middlemen while increasing the trust in an ecosystem of stakeholders. There are parallels between a forthcoming analytical strip and other organizations exploring blockchain technologies.

Figure 7 shows the consumer behavior analysis. It includes social habits, the regularity with which they are used, and their influence on purchasing decisions. Companies analyze consumer behavior and offer more environmentally friendly products and services to learn about population objectives. Before purchasing a product or service, consumers' acts are called purchases. A 96.6% improvement over existing approaches can be achieved using the FP-BCT methodology, which uses search engines, social media monitoring, and other techniques. Using blockchain technology, social media marketing may become a fully automated process. This will include everything from making a reservation, to purchasing, to posting an ad on a social media platform, all with cryptocurrency support. Blockchain on social media promises to free up customers from marketing data. This is because they have every reason to trust that the information they are seeing is true and correct. Marketers will be able to make better selections in the end, which will increase their ROI. Consider

Figure 7. Consumer Behavior Analysis
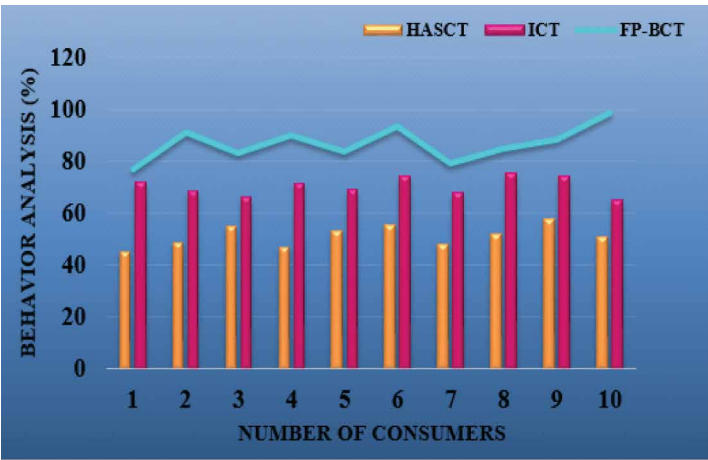
this method, since it helps organizations adjust their marketing tactics to the way consumers have been affected by previous marketing efforts. Consumer behavior studies examine how buyers desire to buy a product, service, or company. Consumers are bombarded with adverts from many internet firms as networking expands digitally. Online shopping has become an important marketing tool for established brands and consumer categories. In this modern digital era, companies throughout the globe are well aware of this fact. Consumers are at the center of modern technologies' security, personal space, confidence, and transparency issues. Every time someone makes a purchase or pays with a credit card online, they leave a digital footprint that includes a wealth of information about who they are, what they like to buy, how much they spend, and where they make those purchases.

Table 3 shows the risk management ratio. Business/operational risk refers to the activities inside an organization, such as the structure, systems, people, goods, or processes involved. Insufficient or failed internal procedures, personnel, and systems can result in a financial loss for the company, as can external circumstances. As e-commerce grows, the need for risk management grows as well. Setting information security goals, identifying risks and assaults, and deciding on responses are all part of the process. Management of risk involves identifying and evaluating potential risks to a company's capital and profit. Many factors contribute to these risks, such as financial uncertainty, legal obligations, technological challenges, and strategic management failures. The suggested solution handles risk management in e-business 96.9% better than the existing methods. The proposed method increases reliability, satisfaction, growth, behavior analysis, and risk management.

CONCLUSION

To maintain client faith in the internet as a replacement for conventional purchasing ways, companies must make the required measures to eliminate or significantly minimize these threats to their online enterprises based on FP-BCT. Brands and customers can be connected via social media, and FP-BCT administers online and physical experiences to influence customer behavior. The corporation assesses and compares the value creation, strategy, and business-capture impact of digitalization, and the differences and similarities. In general, BT can strengthen the relationship between organizational capacity, personnel expertise, and financial performance. Cybercrime has become a rising concern, so e-commerce has to increase its security spending to safeguard consumers from cybercrime. As consumers become more aware of the current internet issues and hazards, their expectations for the services they get have skyrocketed. Many online organizations' efforts to address the growing

Table 3. Risk Management Ratio

Number of Customers	HASCT	ICT	FP-BCT
10	46.3	65.7	79
20	55	71	84
30	47	75	88
40	49.9	62.9	83.7
50	53	72	90.3
60	57	78	91
70	45.1	68.2	92.7
80	51	74.1	93
90	57	79.8	82
100	59	65	96.9

awareness of e-privacy and security rules, procedures, and processes have increased consumers' confidence in the internet. When it comes to their B2C transactions, customers are increasingly looking for reliable shops with secure websites to protect themselves. The financial business could be transformed by several fundamental qualities, including developing trust and forming reliable ecosystems. As a result, several blockchain-based business models are moving toward large-scale implementations worldwide. The numerical outcome of the proposed method improves the reliability ratio (98.7%), satisfaction ratio (98.9%), growth ratio (97.9%), behavior analysis (96.6%), and risk management ratio (96.9%). The obstacles to blockchain adoption in advertising need to be investigated and analyzed in future studies.

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