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Prospects of Blockchain Technology**

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**Communication Adds Value to the Business:
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In recent times, there has been an improvement in the communication process of businesses due to the confluence of IT development and stakeholders' growing interest in all aspects of company activities. This study focuses on the benefits of communication techniques regarding challenges related to the digital transition, such as blockchain. Important conclusions show that corporate communications significantly improve stakeholder expectations. Big data analytics make it feasible to segment various data according to actions, sociodemographic context, and stakeholder characteristics. This makes it easier to provide messages that are specifically focused on the requirements of stakeholders in the end. Blockchain is used to examine large amounts of data and make real-time predictions about communications. The assessment does, however, also point out drawbacks and obstacles, such as privacy issues, data security threats, and the digital divide.

Keywords: *corporate communication, ESG, blockchain*

Introduction

As next-generation information technologies such as big data, cloud computing, and mobile internet continue to gain popularity, society is shifting from traditional information systems to smart information systems. Bonsón and Bednárová (2019) suggest that blockchain technology (BT) will likely play a critical role in the digital era, with significant implications for businesses and society. Supported by innovative technological advances such as blockchain, artificial intelligence, and big data, the digital economy has arisen as a new frontier for global competitiveness and a new source of economic growth for the country (Chowdhury et al., 2023; Goldfarb & Tucker, 2019). Digital transformation is an all-encompassing, methodical redesign of organizational infrastructure and operations that leverages data as the driving force and information technology as the basis (Scuotto et al., 2021). Setting to bring radical innovation and improvement to an entity (such as a company or business network), digital transformation is defined as a fundamental change process made possible by digital technologies. This process aims to strategically leverage an entity's key resources and capabilities to create value for its stakeholders (Gong & Ribiere, 2021). It covers a range of topics, such as business models and procedures, production operations, strategy, and corporate communication. Internal and external communication within companies is now combined.

The term “communication” often refers to the voluntary actions that businesses take to meet the needs of stakeholders, putting stakeholder interests ahead of their own (i.e., law).

Beyond the reputation of the company, communication also enhances the employer's brand. Given the critical role that communication plays in the success of businesses, the need for good communication grows, as communication is how all awareness and knowledge are generated.

For an organization, communicating may be a delicate undertaking. If not well thought out and carried out, stakeholders may quickly become skeptical and give the message their critical attention. Companies that heavily publicize their events run the danger of casting doubt on the reasons behind their actions. We are therefore interested in learning more about how to create and implement effective and neutral communication. The issue of net neutrality has taken prominence in both corporate policy and study as data transmission has grown in importance within digital technologies. Internet should have control over content, is the question being debated in the net neutrality space (Goldfarb & Tucker, 2019).

This study tends to underline the role of IT in communication diffusion by examining the path of innovation and adoption of Blockchain. The primary contribution of this paper is to demonstrate how BC can drive information in a company and serve as a catalyst for business model innovation.

RQ: In a fast-paced workplace where IT use is becoming increasingly important, is it feasible that a new business model can make communication more appropriate to provide value to the company?

Effective communication enhances a company's external reputation, fulfils stakeholder expectations, and adds value. Additionally, communication makes

“visible and perceptible” the ability of businesses to carry out their purpose in the social environment in which companies operate, which extends the value of economic capital through strategic action and creates intangible wealth.

Among other things, the company’s strategic credibility is based on the communication it produces through the methodical application of tools.

Since the interlocutors naturally have various interests in the company, they may anticipate information that varies both numerically and qualitatively.

Certain “species” of communication tend to split at a narrow boundary. The company’s intention to transfer information that is satisfactory in terms of the content, the channel, the target audience, and the effects are related to the search for criteria for the identification of communication areas.

Naturally, stakeholders anticipate information that can vary both numerically and qualitatively from one another due to their varying interests in the organization.

Moreover, employees can work more productively, successfully, and efficiently when they have access to digital tools for communication, collaboration, and information access. This eventually improves organizational results.

This is why blockchain technology has been proposed, which opens new business opportunities because it improves corporate communication's selectivity (to reach specific interlocutors), effectiveness (to make decisions), and quickness (to be available at the right time).

The paper is structured as follows: Section 2 provides a literature review. Section 3 explains the theoretical model we developed. Finally, the conclusions are presented, along with limitations and future directions for research.

Literature Review

The term blockchain was introduced with the definition of the Bitcoin protocol, which in 2008 (Nakamoto, 2008) first defined the fundamentals of the technology. Transaction data are stored in blocks that are tightly chained together, completing a Ledger Distributed (LD) in numerous copies among network nodes.

The narrow blockchain is the data book shared by each node of the decentralized system (Yermack, 2017).

The information is replicated on many independent subjects, and the integrity and robustness of the data are ensured through a consensus algorithm that can be of different types (the most common is proof of work). Therefore, the system’s security is not devolved to a central entity considered trustworthy but is established by the quality of the protocol used by the participants.

The blockchain can be public or private. In the former case, the permissionless blockchain stipulates that each participant can read, send, and receive transactions and participate in the consensus process as a node. In the other case, in a permissioned blockchain, the operator restricts the participation and transactions that can be allowed and performed. In the latter sense, it is referred to as Distributed Ledger Technology (DLT).

This list is not exhaustive; there are additional, more vertical areas of operation such as time stamping and notarization services, the supply chain area (Suwanposri et al., 2021; Catalini, 2017), Digital Autonomous insurance services, and many others.

Finally, Blockchain is a system, or a means of doing things, for documenting transactions rather than a particular technology (Han et al., 2023). In a blockchain, ownership can be passed from one party to another, unlike on the Internet, where data is shared. The blockchain model is appealing for several reasons. For instance, it might eliminate the need to reconcile various ledgers in a market with numerous transacting participants. Any participant in the ledger may track all prior transactions, allowing for enhanced transparency and blockchain self-audit.

The high-quality data eliminates the risk of errors and duplication (Martin-Bariteau, 2018), resulting in complete and reliable stored data (Reyna et al., 2018; Tapscott & Tapscott, 2010).

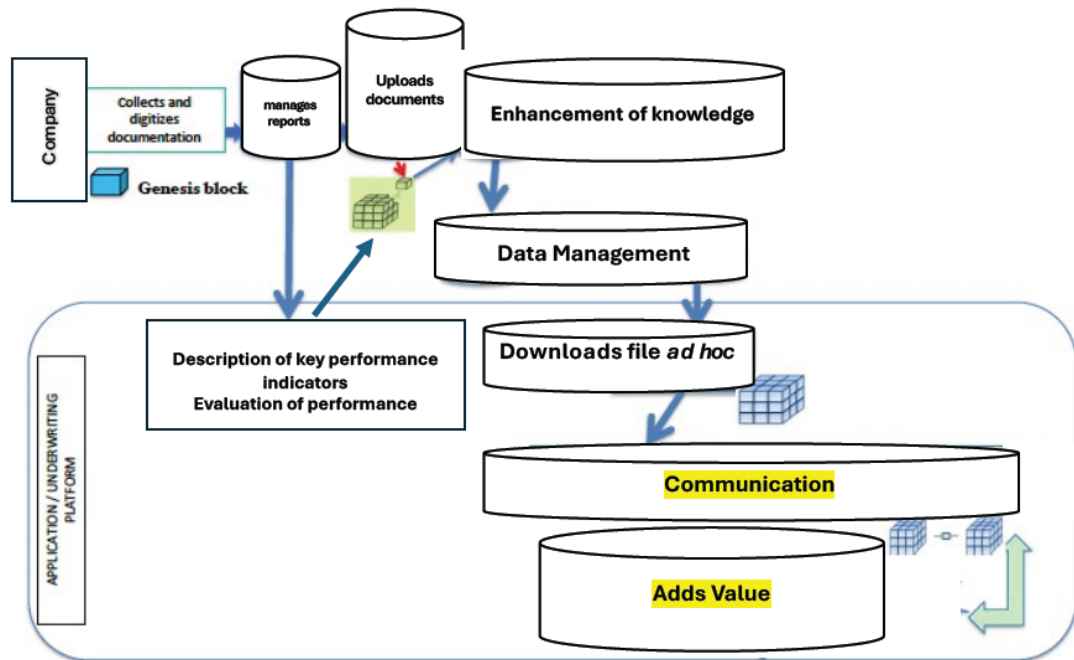
The Theoretical Model

The theoretical model was developed through a literature review. Direct communication flows, as well as communicative flows to the wider society with transparent and controlled mediation, are made possible by blockchain technology. These communication flows can be directed toward different stakeholders and can be of commercial, institutional, management, profit, or financial forms.

The inherent security of the blockchain network, which is ensured by both encryption and chaining of blocks, makes it incredibly difficult to manipulate and tamper with the data entered the ledgers. The immutable record eliminates the risk of manual errors, increases efficiency, and reduces the possibility of regulatory violations (Shah & Jani, 2018). The online platform where these technologies are implemented makes it simple to digitize and codify information using ad hoc procedures (Shahbazi & Byun, 2022).

With the help of IT tools, governance may effectively provide both hard and soft information, thereby altering traditional firm activities. This is the theoretical paradigm presented in Figure 1.

Figure 1. *The Structure of Blockchain and the Flows of Information (Our Elaboration)*



In the blockchain registry, the inputs and outputs of the process are kept. This methodology enables access to the same information source for every entity involved in the communication origination phase or even in the following servicing.

Soft information is contained in the green block of Figure 1, which suggests a new business strategy. Small businesses have the softest information since they are firmly rooted in the community.

An algorithmic tool determines the pre-approval of the information's quality after gathering and making digitally available all the material (both hard and soft) required to meet the stakeholders' communication needs about a particular matter of the company's action. Arranging the data so that each need is met and that, for example, selectivity, efficacy, and speed are respected is the second phase.

An algorithm tool determines the pre-approval of the information's quality once the hard and soft data required to meet the stakeholders' communication needs about a particular firm action has been gathered and made digitally available. The second step involves arranging the data such that every demand is met and that, for example, the criteria of selectivity, efficacy, and rapidity are followed.

Blockchain technology involves decentralization and distributed processing at the internal area level, allowing every employee to participate in the communication flow and ensuring that the communication is a true network result even though the organization contains both hard and soft information and data. Employees handle

distributed information and function as nodes in the network. They are connected and productive regardless of their location by utilizing digital technologies for collaboration and contributing to create the block.

No matter where they are located, firms may guarantee that they are connected and productive by utilizing digital technologies for communication and collaboration.

The network's dispersed nodes ensure system dependability and enable quicker more effective communication. Transparency in communication and effective governance are guaranteed by shared consensus. Strict control over data, reporting, and classification is maintained by the network. The last step is the communication.

However, several factors do not favor the development of blockchain technology; challenges include allocating responsibilities for implementing digital platforms and defining rules for accessing and using information by users, as well as exercising control over the correct and safe management of information.

Conclusion

Blockchain functions as a decentralized database. It reduces costs by streamlining verification processes. With recognized attributes like persistency, anonymity, and audibility, it operates on principles such as transparency with pseudonymity enhancing traceability and data transparency.

Blockchain facilitates communication between stakeholders and affects their behaviours by closing the information gap.

The suggested model would illustrate the benefits of using a BC in communication: 1. to use pertinent soft information about applicants, which is codified by advanced IT methods; and 2. to guarantee that all employees may evaluate the data directly. Furthermore, blockchain technology makes verification and authentication faster, which lowers uncertainty and boosts productivity. The establishment of such a novel approach has important benefits for risk-sharing as well.

Blockchain has various advantages to operational efficiency, including:

1. Blockchain technology offers sufficient safety and control, which results in high-quality data. Errors and duplication are eliminated.
2. By making sure that no data is added to the blockchain twice, blockchain technology prevents "double data" entry.

Despite its potential for cost reduction, blockchain technology still restricts more traditional methods. The initial investment required for blockchain infrastructure and development is expensive, and it may not be practical for smaller financial institutions and banks to adopt this new technology (Sugandh and Tawheed, 2022). Another obstacle to widespread blockchain adoption is the significant consumption of resources: To slow down the access rate of new blocks and prevent blockchain network from attack, the traditional consensus process

consumes a lot of resources (e.g., computing power in Proof of Work and coinage in Proof of Stake), which is too costly for resource-limited IoT devices (Cao et al., 2019).

However, several factors do not favor the development of blockchain technology; challenges include allocating responsibilities for implementing digital platforms and defining rules for accessing and using information by users, as well as exercising control over the correct and safe management of information.

The model we propose requires significant human resources and investment expenditures for its management within the business.

Since our contribution is yet theoretical, we are aware of its limits. This research was conducted as a component of a larger project *in fieri*. To demonstrate the efficacy of the framework, more study is needed. It is necessary to make further modifications based on empirical analysis that apply to businesses operating in different sectors.

References

- Adegoke, B. O., Odugbose, T., & Adeyemi, C. (2024). Harnessing big data for tailored health communication: A systematic review of impact and techniques. *International Journal of Biology and Pharmacy Research Updates*, 3(2), 1-10.
- Arora, S. & Nabi, T. (2022). Blockchain Adoption in Banking Systems: A Boon or Bane? In S. Gupta, P. Kansra, & G. Kukreja (Eds.), *Applications, Challenges, and Opportunities of Blockchain Technology in Banking and Insurance* (pp. 19-42). IGI Global. <https://doi.org/10.4018/978-1-6684-4133-6.ch002>
- Bonsón, E., & Bednárová, M. (2019). Blockchain and its implications for accounting and auditing. *Meditari Accountancy Research*, 27(5), 725-740. <https://doi.org/10.1108/MEDAR-11-2018-0406>
- Cao, B., Li, Y., Zhang, L., Zhang, L., Mumtaz, S., Zhou, Z., & Peng, M. (2019). When Internet of Things meets blockchain: Challenges in distributed consensus. *IEEE Network*, 33(6), 133–139. doi:10.1109/MNET.2019.1900002
- Catalini, C. (2017). How blockchain applications will move beyond finance. *Harvard Business Review*, 2. <https://hbsp.harvard.edu/product/H03HRT-PDF-ENG>
- Chowdhury, E. K., Khan, I. I., Dhar, B. K. (2023). Strategy for implementing blockchain technology in accounting: Perspectives of stakeholders in a developing nation. *Business Strategy & Development*, 6(3), 477-490.
- Goldfarb, A., & Tucker, C. (2019). Digital economics. *Journal of Economic Literature*, 57(1), 3-43. <https://doi.org/10.1257/jel.20171452>
- Gong, C., & Ribiere, V. (2021). Developing a unified definition of digital transformation. *Technovation*, 102, 102217. <https://doi.org/10.1016/j.technovation.2020.102217>
- Martin-Bariteau, F. (2018). Blockchain and the European Union general data protection regulation: The CNIL's perspective. *Blockchain. Working Paper Series*, 1. <http://dx.doi.org/10.2139/ssrn.3275783>
- Nakamoto, S. (2008). *Bitcoin: A Peer-to-Peer Electronic Cash System* (August 21, 2008). Available at SSRN: <https://ssrn.com/abstract=3440802> or <http://dx.doi.org/10.2139/ssrn.3440802>
- Prewett, K. W., Prescott, G. L., Phillips, K. (2020). Blockchain adoption is inevitable—Barriers and risks remain. *Journal of Corporate accounting & finance*, 31(2), 21-28.

- Reyna, A., Martín, C., Chen, J., Soler, E., & Díaz, M. (2018). On blockchain and its integration with IoT. Challenges and opportunities. *Future generation computer systems*, 88, 173-190. <https://doi.org/10.1016/j.future.2018.05.046>
- Scuotto C., Ilardi C. R., Avallone F., Maggi G., Ilardi A., Borrelli G., et al. (2021). Objective knowledge mediates the relationship between the use of social media and COVID-19-related false memories. *Brain Sciences*, 11, 1489. <https://doi.org/10.3390/brainsci11111489>
- Shah, T., & Jani, S., (2018). Applications of Blockchain Technology in Banking and Finance. 10.13140/RG.2.2.35237.96489
- Shahbazi, Z., & Byun, Y.C. (2022). Machine Learning-Based Analysis of Cryptocurrency Market Financial Risk Management. *IEEE Access*, 10, 37848-37856.10.1109/ACCESS.2022.3162858
- Suwanposri, C., Bhatiasevi, V., & Thanakijombat, T. (2021). Drivers of Blockchain Adoption in Financial and Supply Chain Enterprises. *Global Business Review*. 10.1177/09721509211046170.
- Tapscott, D., Tapscott, A. (2016). *Blockchain revolution: how the technology behind Bitcoin is changing money, business, and the world*, New York: Penguin Random House.
- Yermack, D. (2017). Corporate governance and blockchains. *Review of Finance*, 21(1), 7-31. <https://doi.org/10.1093/rof/rfw074>