Understanding blockchain's influence on brand management: the blockchain branding model

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Abstract

Purpose – This study aims to provide a holistic and comprehensive view of the blockchain's contribution to the brand management process, integrating all relevant subthemes that previous studies have examined separately.

Design/methodology/approach – This paper adopts a qualitative approach by using constructivist grounded theory that draws on the experience of managers who work in the agrifood industry and are involved in implementing blockchain projects for Italian quality foods.

Findings – Findings allow the construction of an interpretive framework called the Blockchain Branding Model, which comprehensively interprets the interplay between blockchain and brand management. The Blockchain Branding Model comprises three levels that synthetize how blockchain intervenes in: accelerating brand enabling by providing new resources and digital assets, strengthening brand building by enriching brand identity and reinforcing brand positioning, and nurturing the brand–consumer relationship by bringing the consumer closer and tightening the bond.

Originality/value – To the best of the authors' knowledge, this is one of the first field works to explore the relationship between blockchain and branding by building a holistic model related to integrating blockchain into brand management. Results provide useful managerial implications related to strategic, operational, organizational and relational levels.

Keywords Blockchain, Brand management, Agrifood industry, Constructivist grounded theory (CGT), Blockchain branding model

Paper type Research paper

Introduction

Digital technologies, such as social media, big data, artificial intelligence, extended reality and blockchain, are the most significant factors that have led to a profound evolution of branding strategies and brand–consumer relationships (Veloutsou and Guzman, 2017; Ertemel, 2018; Keller, 2021). In a "data-rich" (Keller, 2020, p. 1000) and hyperconnected world (Swaminathan *et al.*, 2020) managers cannot overlook recent technological advancements to optimally integrate them into their branding strategies (Hollebeek *et al.*, 2022; Parris and Guzmán, 2023).

One of the emerging technological phenomena is Web 3.0, which represents a new evolution of the worldwide web but was conceived as a decentralized, ubiquitous and integrated environment of interaction. Web 3.0 is gaining momentum, with 94 billion USD already invested by companies (Holmes, 2023) and over 81 million wallet users in 2022 (Statista, 2023).

Knowing Web 3.0 means understanding its enabling technology, which is blockchain, the infrastructure that allows for the systematic and chronological logging of transactions for the creation of a permanent and tamper-proof record of information (Peres *et al.*, 2023).

Raised in the domain of cryptocurrencies, blockchain has widened its scope beyond securing information, exchanging financial assets (Du *et al.*, 2019) or tokenized assets (Malik *et al.*, 2023) to create new digital environments where brand activities can be framed, including exclusive tokenized

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branding events, brand communities, brand collectables or loyalty programs (Boukis, 2020; Colicev, 2022).

The growth of blockchain adoption by firms has attracted the interest of scholars, as the distinctive attributes of this technology – transparency, decentralization and immutability (Gleim and Stevens, 2021; Hakkarainen and Colicev, 2023) – can enable major changes in firms' business models, marketing and branding. According to recent studies (Frizzo-Barker *et al.*, 2020; Peres *et al.*, 2023; Tan *et al.*, 2024), despite blockchain's growing relevance, research on its impact on marketing and, more specifically, branding, is still in its infancy and should be more investigated. An analysis of the contributions in this strand reveals two relevant gaps in terms of the themes discussed and the method adopted.

Regarding the former, previous studies are fragmented and focused on specific aspects of the brand management process. Some scholars addressed the activities connected to technological factors, resources and processes related to blockchain that can facilitate changes in branding (Hakkarainen and Colicev, 2023; Redler and Corvino, 2023; Deventer *et al.*, 2024). Other studies highlighted that blockchain is an important tool for brand managers to build brand identity (Colicev, 2022; Shankar *et al.*, 2024) and positioning (Boukis and Magrizos, 2018; Boukis, 2020; Chen *et al.*, 2025) or to increase brand trust, engage consumers in the brand community and construct brand loyalty (Ante *et al.*, 2024; Antoniadis *et al.*, 2019; Erevelles *et al.*, 2020; Ferreira da Silva and Moro, 2021; Hoang *et al.*, 2024; Treiblmaier and Petrozhitskaya, 2023) and brand equity (Boukis, 2022; Peres *et al.*, 2023). However, a holistic reading that jointly considers all the mentioned subthemes to delineate blockchain's impact on the brand management process is lacking.

Regarding the latter (i.e. the method), previous studies have been conceptual (Boukis, 2020), and few empirical studies have adopted the consumer perspective to measure brand outcomes (e.g. brand attitude, brand engagement and brand loyalty) (Boukis, 2022; Utz *et al.*, 2022; Xie *et al.*, 2024). A managerial perspective focused on how blockchain could be implemented, and its contribution to brand management is lacking. Instead, it is a relevant point of view, as it could help investigate how blockchain is changing practitioners' decisions while outlining the main challenges marketers face in implementing and managing brands through this technology.

Providing a comprehensive reading of the blockchain contribution to all the aspects of the brand management process from a managerial perspective seems important from a theoretical point of view because it could answer the call for *"theoretical grounding, methodological diversity and empirically grounded work"* (Frizzo-Barker *et al.*, 2020, p. 1) to investigate the impact of blockchain on branding. This perspective is also relevant for practitioners, as building and managing strong brands is a priority for marketers because it serves as a measure of the effectiveness of marketing actions (Keller, 2006). This importance is even more significant in present markets characterized by continuous technological transformations (Veloutsou and Guzman, 2017) and driven by the evolution of breakthrough technologies, which are increasing market complexity (Keller, 2023).

Considering the aforementioned gaps, this work aims to provide a holistic and comprehensive view of the contribution of blockchain technology to the brand management process, integrating all relevant subthemes that previous studies have examined separately.

The research adopts a multistakeholder perspective by focusing on the viewpoints of managers. Concerning the specific research context, the agrifood sector provided a privileged viewpoint from which to observe the development of the adoption of blockchain by brands. In fact, within this industry, blockchain extends its scope across the value chain through the development of virtual platforms for selling NFTs and cryptoassets, as well as the adoption of ledger technologies for tracing product processes. This ecosystem actively involves consumers and brands and is expected to reach approximately 1.5 billion U.S. dollars by 2026 (Statista, 2020).

The results of this study have significant implications at both the theoretical and empirical levels. They provide a comprehensive understanding of the integration of blockchain in branding activities, allowing for the construction of the *Blockchain Branding Model,* an interpretive framework that comprises three levels: it describes how blockchain intervenes in *accelerating brand enabling*, *strengthening brand building* and *nurturing brand–consumer relationship*. The findings also demonstrate how blockchain projects can support brand practitioners in building strong brands by enhancing their intangible components, linking brands' past and present, and developing a closer relationship with the consumer.

The paper is structured as follows. After a review of the literature on the relationship between blockchain and branding and a description of the rationale behind the purpose of the study, the methodology and the main findings are presented. Then, theoretical and managerial implications, limitations, and further research directions are described.

Background

Blockchain and branding

Blockchain technology consists of a digital ledger made up of a series of linked data blocks, each representing a transaction; this ledger takes the form of a distributed database shared on a large computer network (Gatomatis and Bogonikolos, 2021). Each participant in the blockchain system is a node that contributes to the validation of the transactions that occur in the chain based on a consensus formula; in other words, the transactions can be modified only if all the participants agree (Ølnes *et al.*, 2017).

In marketing, blockchain applications are becoming increasingly relevant in both strategy and operations (Gatomatis and Bogonikolos, 2021; Hakkarainen and Colicev, 2023), and recently, the use of blockchain technology for marketing has attracted the attention of academia through the exploration of the role of blockchain in brand management from diverse lenses (Frizzo-Barker *et al.*, 2020; Stallone *et al.*, 2021). More specifically, these studies have addressed several brand management subthemes, as synthesized in Table 1.

Blockchain technology can represent for the company an asset capable of facilitating the building of successful brands both (i) by fostering innovation in value creation logics and (ii)

by allowing the creation of an immutable digital twin of the product. With respect to the first issue, Hakkarainen and Colicev (2023) focused on blockchain-enabled brand value innovation, and three aspects emerged from their work:

- technology-focused service innovations through cryptocurrencies and smart contracts;
- customer-focused service innovations related to gamification experiences and loyalty programs; and
- product and brand innovations with NFTs (Hofstetter *et al.*, 2022).

For digital twin, this refers to the digital counterpart of real objects, which provides digitally modeled behavior and the performance of physical entities. The use of blockchain makes the digital twin immutable and ensures its full correspondence with the physical object. Redler and Corvino (2023) argued that digital twins need to be considered a major issue for brand experience management in the digital era and the metaverse. Within this realm, several studies have investigated the role that NFTs (of which digital twins are a category) play in brand psychological evaluation processes (e.g. Sung *et al.*, 2023; Xie *et al.*, 2023; Deventer *et al.*, 2024; Hofstetter *et al.*, 2024; Xie *et al.*, 2024).

Other scholars highlighted the important role of blockchain in (i) the construction of authentic brand identity and (ii) the definition of brand positioning and brand storytelling. Regarding the former, one of the latest published papers (Shankar *et al.*, 2024) demonstrated, through research on managers and customers in a B2B context, that blockchain can positively impact brand identity and brand authenticity. Colicev (2022) consistently showed how blockchain can act as a valuable brand asset, allowing the creation of NFTs, which can be considered real standalone brand components. Concerning the latter, Boukis (2020) highlighted how blockchain can impact a brand's image by enhancing its brand storytelling ability. Recognizing the presence of three distinct customer segments – i.e. speculators, casual collectors, and cryptocurrency natives - Chen *et al.* (2025) proposed tailored branding strategies for luxury brands in NFT markets. These strategies aim to establish a brand positioning that emphasizes either the potential financial returns of NFT investments, the unique and exclusive attributes of the products, or the transaction security guaranteed by blockchain technology. Implementing blockchain technology in storytelling activities offers new ways of attracting customer interest (Boukis and Magrizos, 2018) and allows brands to share their brand identity and unique aspects, such as production stages, by equipping their products with blockchain-enabled barcodes.

Most of the contributions in the realm of blockchain and branding can be traced back to subthemes inherent in the relationship between brand and consumer (e.g. Ante *et al.*, 2024; Antoniadis *et al.*, 2019; Erevelles *et al.*, 2020; Ferreira da Silva and Moro, 2021; Hoang *et al.*, 2024; Le, 2024; Treiblmaier and Petrozhitskaya, 2023). They highlighted how this technology is relevant for (i) improving customer experience; (ii) advancing brand communication; (iii) sustaining consumers' trust and brand equity; and (iv) strengthening customer loyalty.

With respect to the impact of blockchain on customer experience, recent studies in the B2B context (Hoang *et al.*, 2024) also highlighted a transformation in the utilization and management of customer data driven by blockchain technology. In B2C context, the involvement of third parties equipped with advanced technologies such as blockchain empowers consumers to trade their data directly with third parties instead of allowing advertisers to use their data without reciprocation (Boukis, 2020). At the same time, third-party management of consumer data enables brands to access these data to optimize advertising strategies while ensuring a better overall consumer experience. Colicev (2022) showed how blockchain and NFTs can act as valuable brand assets able to enhance the experience in all stages of the customer journey by generating awareness and leading to attachment through engagement activities that include the creation of brand communities and exclusive events.

Regarding the advancement of brand communication, recent research in social media (Dwivedi *et al.*, 2021) highlighted the difficulty brands face in assessing the efficiency and effectiveness of online advertisements due to the absence of efficient tracking and verification systems for viewers. The near-total control of online advertising by intermediaries such as Meta and Google can also lead to increased advertising costs without a corresponding improvement in efficiency (Aguirre *et al.*, 2015). These challenges can be reduced through the application of blockchain technology, which can help reduce the involvement of intermediaries and allows reliable verification of the number of viewers and engagement (Boukis, 2020).

The sustainment of consumers' trust is crucial for all successful brand–consumer relationships; blockchain enhances brand trust by replacing subjective trust in brands with objective, verifiable distributed trust in technology to better ensure the integrity of a brand (Erevelles *et al.*, 2020; Ferreira da Silva and Moro, 2021). Current research offers various avenues for bolstering consumer trust in a brand through the integration of blockchain technology, such as curbing counterfeit consumption and enhancing brand transparency (Boukis, 2020). Through blockchain technology, both firms and consumers can trace the authenticity and production conditions of products, thereby discerning their origin and mitigating the risk of counterfeit products reaching consumers (Le, 2024). Blockchain applications also support retailers and manufacturers by offering insights into the lifecycle of their products, covering details from raw material procurement to production conditions, supply chain logistics, retail distribution, and, ultimately, consumer interaction (Hoang *et al.*, 2024).

Brand trust, in turn, is closely linked to brand equity from the consumer perspective. A recent editorial by Peres *et al.* (2023) suggested how blockchain technology could improve the management and measurement of customer-based brand equity (CBBE) through information stored in blockchains. Similarly, Boukis (2020, 2022) suggested that the technological features of blockchain could strengthen authenticity by providing assurances about a brand's originality through the digital certification of its assets, thus establishing trust-based consumer relationships that drive consumer-based brand equity.

Table 1 Literature on blockchain and brand management

Author(s)	Year	Paper typology	Method	Sample	Purpose	Brand management subthemes
Ante *et al.*	2024	Empirical	Quantitative approach (analysis of fan token polls)	Consumers	Examining the level of fan engagement in fan token polls and the resulting (psychological) underpinnings of fan loyalty	Brand loyalty
Antoniadis *et al.*	2019	Conceptual	–	–	Delineating how blockchain works, its characteristics and the possible uses and applications of blockchain in marketing	Brand loyalty
Boukis	2022	Empirical	Qualitative approach through in-depth interviews	Consumers (i.e. crypto owners)	Exploring the consumer-based brand equity in the cryptocurrency market	Consumer-based brand equity
Boukis	2020	Conceptual	Literature review	–	Deepening how the adoption of blockchain technology affects a firm's effort to build and enhance consumers' relationships and experience with the brand	Brand positioning brand storytelling Customer experience brand trust
Boukis and Magrizos	2018	Conceptual	–	–	Discussing the challenges emerging from the application of blockchain technology for brands as well as their impact on existing brand management strategies	Brand storytelling
Chen *et al.*	2025	Empirical	Data mining approaches	Consumers (NFT marketplace)	Identifying and understanding customer segments, their characteristics and behavior within the luxury brand NFT market	Brand positioning
Colicev	2022	Conceptual	–	–	Deepening how NFTs can create value for brands by (1) being standalone brand components and (2) forming and harnessing the power of NFT brand communities	Brand identity Customer experience
Deventer *et al.*	2024	Empirical	Multiple case-studies (desk analysis)	50 NFT initiatives launched by 42 brands	Understanding of the value that brands can potentially offer to customers with NFT initiatives	Brand innovation
Ferreira da Silva and Moro	2021	Conceptual	Text mining literature analysis	–	Understanding of blockchain from the consumer trust perspective	Consumer trust
Erevelles *et al.*	2020	Editorial	–	–	Highlighting the foundational premises to create a theoretical framework for the blockchain brand	Brand trust
Hakkarainen and Colicev	2023	Conceptual	–	–	Understanding how the blockchain-enabled advances (i.e., smart contracts, cryptocurrencies, play-to-earn games, NFTs) can have important implications for consumers and brands	Brand innovation
Hoang *et al.*	2024	Empirical	Qualitative approach through semistructured interviews and focus groups	Managers and customers (B2B context)	Understanding the impacts of the blockchain technology adoption by retailers on customer experience. To explore the role of blockchain in the retail brand–customer relationship	Brand loyalty Brand trust

(***continued***)

Table 1

Author(s)	Year	Paper typology	Method	Sample	Purpose	Brand management subthemes
Hofstetter *et al.*	2024	Empirical	Secondary data and (experiments)	Consumers	Arguing (and finding) that social value can outweigh intrinsic value as a determinant of willingness-to-pay in the context of NFTs	Brand innovation
Hofstetter *et al.*	2022	Conceptual	–	–	Deepening the role of NFTs in challenging established marketing and proposing a set of preliminary NFT and crypto-marketing research questions	Brand innovation
Le	2024	Empirical	Mixed method: Qualitative approach (in-depth interviews) and quantitative study (survey)	Consumers	Exploring consumer expectations when scanning QR codes on product labels; assessing the impact of blockchain on brand trust in traceability labels	Brand trust
Peres *et al.*	2023	Editorial	–		Providing a comprehensive overview of the potential impact of blockchain on several core marketing areas	Customer-based brand equity
Redler and Corvino	2023	Conceptual	–		Drawing attention on the effect of digital twin approaches for brand management	Digital twin
Sung *et al.*	2023	Empirical	Quantitative approach (survey and SEM)	Consumers (actual metaverse platform users)	Investigating the antecedents and consequences of consumers' assessments of the gains and losses associated with (not) buying NFTs	Digital twin
Shankar *et al.*	2024	Empirical	Mixed method: Qualitative approach through interviews and quantitative studies involving employees in manufacturing firms	Managers and employees (B2B context)	Exploring how to protect brand identity in the B2B context	Brand identity
Treiblmaier and Petrozhitskaya	2023	Empirical	Mixed method: analysis of Twitter tweets and a survey of consumers	Consumers	Investigating how blockchain-based loyalty programs transform B2C relations through innovative customer services that bear important properties of a sharing economy	Brand loyalty
Utz *et al.*	2022	Empirical	Qualitative approach (workshops and interviews with customers)	Consumers	Understanding how blockchain can enhance institution-based trust and how a trust-based customer loyalty program can be designed with blockchain technology	Brand loyalty
Xie *et al.*	2024	Empirical	Quantitative approach (survey)	Consumers	Exploring the underlying mechanisms by which branded NFTs impact branding outcomes (i.e., brand word-of-mouth intention)	Brand innovation
Xie *et al.*	2023	Empirical	Quantitative approach (survey)	Consumers	Examining the perceptions of Gen Z and millennials toward branded NFTs and the impact of these perceptions on their attitudes and behaviors toward both the NFTs and the brand	Digital twin

Source(s): Authors' own work

On the topic of customer loyalty, other scholars (Antoniadis *et al.*, 2019; Treiblmaier and Petrozhitskaya, 2023; Hoang *et al.*, 2024) explored the potential uses of blockchain in brand loyalty programs through asset tokenization and the exchange of rewards using cryptocurrencies to enhance the perceived value conveyed by brands. The implementation of blockchain-powered brand loyalty programs also provides advantages over traditional approaches by giving customers greater control over their data (Utz *et al.*, 2022).

In summary, research on the impact of blockchain on branding noted the great potential of this technology, but, despite the relevance of this topic, the literature on the interplay between brand and blockchain has two significant limitations.

First, the literature is fragmented; papers focus on the impact of blockchain on individual aspects of the brand management process, devoting greater attention to the subthemes related to brand–consumer relationship (e.g. loyalty programs, online brand communication, brand trust), and a comprehensive view of the impact of blockchain on brand management is lacking.

Second, previous studies are mainly conceptual, and the adoption of a managerial perspective is still limited. In fact, as showed by Table 1, those empirical studies aiming at deepening blockchain branding outcomes have almost exclusively adopted the consumer perspective. The above analysis reveals that the only contributions that have adopted the managerial perspective (e.g. Hoang *et al.*, 2024; Shankar *et al.*, 2024) have focused on specific brand management subthemes (i.e. brand loyalty/trust and brand identity, respectively) in B2B contexts, which present very different dynamics from a branding perspective than those in B2C contexts (Leek and Christodoulides, 2011; Zhang and Du, 2020).

Considering the limitations of previous studies and the recent call for research (Frizzo-Barker *et al.*, 2020; Gleim and Stevens, 2021; Peres *et al.*, 2023), this paper aims to provide a holistic and comprehensive view of the contribution of blockchain technology to the brand management process, integrating all relevant subthemes that previous studies considered separately.

The study adopts a managerial perspective, often neglected in previous research, which is particularly important when addressing marketing issues involving technology (such as blockchain) that are unfamiliar to consumers. By offering a comprehensive view of blockchain technology's impact on the brand management process, this paper aims to move beyond overly narrow perspectives that might overlook the overall benefits of this technology for companies and consumers.

Methodology

Given the emergent nature of the topic, the study uses a qualitative approach based on constructivist grounded theory (CGT) (Charmaz, 2001) that adopts the grounded theory methodology under the constructivist research paradigm (Mills *et al.*, 2006) and follows an interpretive approach to rich data collection and comprehension (Charmaz, 2006). The CGT approaches data analysis and the process of progressive theoretical construction by drawing meanings from reiterative processes conducted by the researcher, involving continuous questioning to elucidate the meanings of data as such facilitating theoretical interpretations.

Data gathering

Theoretical sampling was used to select the study participants, as prescribed by the CGT. A key informant approach was adopted for the panel selection (Robson and Foster, 1989), as informants were recognized as having a privileged point of view about the topic under analysis, managing blockchain projects involving quality food products and brands to establish links among lived experiences and foster connections between such experiences and the interplay between blockchain and brand management. The data collection followed a value-chain approach: the sample managers included manufacturing, supply, retailers and consultants. As the food industry was chosen as a specific context, product consortia involved in the design of blockchain projects were also included in the sample.

The choice of sector is due to the agrifood industry's approach to blockchain adoption. In fact, this sector is among the most cutting-edge sectors in terms of the use of blockchain and has experienced considerable transformation throughout the supply chain due to the adoption of digital technologies. Relevant projects have been initiated by producers, farmers, supply chain actors and multilateral institutions to trace products, and agri-food is one of the few sectors in which blockchain adoption involves all actors in the value chain. Relevant cases from which to select the interviewees were found through discussions with experts on quality food products and by searching online for blockchain projects related to such products.

The search was restricted to a single market to improve the data comparability, and Italy was chosen as the focus area because it is the country with the highest number of quality food products certified by means of the European Quality Scheme, according to the European Commission's eAmbrosia database, and where blockchain would become increasingly relevant within the food sector (Bonetti *et al.*, 2023). All the interviewees held top positions in their organizations, enabling them to provide meaningful insights into the topic under investigation, even though they may not currently hold strict marketing roles (Appendix 1 shows the final list of informants involved in the study). The respondents had extensive experience with blockchain-based projects, having spearheaded groundbreaking blockchain projects within their organizations and overseeing their initiation and full development. Consultants, in turn, played a crucial role in supporting clients during the implementation of technological infrastructure and subsequently throughout the brand management process.

Managers were contacted online and recruited through a snowballing process (Goodman, 1961) and new cases were added until no new insights could be reached (Faulkner and Trotter, 2017; Strauss and Corbin, 1997). The in-depth interviews were conducted via Zoom by two senior researchers. The interviews lasted an average of one and a half hours each and were recorded and transcribed *verbatim* in the interviewee's native language. Interviews were conducted using guiding questions to identify blockchain's contribution to all the aspects of the brand management process that respondents perceived they had received from the adoption of this technology (for the interview guide, see Appendix 2).

Coding process and theory building

The interviews involved a systematic coding procedure that was carried out using MAXQDA based on previous scholars' suggestions to use QDA software to facilitate the encoding process (Vila-Henninger *et al.*, 2022). A software-assisted method was also chosen for enhancing the trustworthiness of the qualitative data analysis (Sinkovics *et al.*, 2009). Consistent with constructivist grounded theory, the data underwent three coding phases (Figure 1).

The initial coding followed an *in vivo* approach to reconstruct the respondents' thinking (Saldaña, 2013). In the next focused coding phase, the most recurrent and significant codes were identified and included in relevant categories; subsequently, links between codes and categories were created to construct patterns and let explanatory themes about the phenomenon under investigation emerge though theoretical coding (Thornberg and Charmaz, 2014). The interviewees' lived experiences were revisited through field notes and memos to maintain the participants' voice and intended meaning in the theoretical results (Mills *et al.*, 2006; Charmaz, 2006). In coherence with the constructivist approach, the style used to present the findings is "evocative of the experiences of the participants" (Charmaz, 2001).

Findings

Through the constructivist interpretative approach to data, three theoretical codes related to the contribution of blockchain to the brand management process emerged. These three levels describe how blockchain technology intervenes in:

1 accelerating brand enabling, by providing new resources and digital assets;
2 strengthening brand building, by enriching brand identity and reinforcing brand positioning; and
3 nurturing the brand–consumer relationship, by bringing the consumer closer and tightening the bond.

These themes could be synthetized in the *Blockchain Branding Model* (Figure 2).

Accelerating brand enabling by providing new resources and digital assets

The first level of the *Blockchain Branding Model* relates to the development of the technological/organizational infrastructure and describes how blockchain interacts with the physical product, where the outcome is an immutable and accessible "digital twin," serving as an asset for the firm to build an even stronger brand. From the respondents' perspective, this theoretical code is the result of the following three focused codes: "Technological Infrastructure Implementation," "Product Digital Twin Creation" and "Consumer Interfaces Activation." These are linked to nine initial codes (Figure 3).

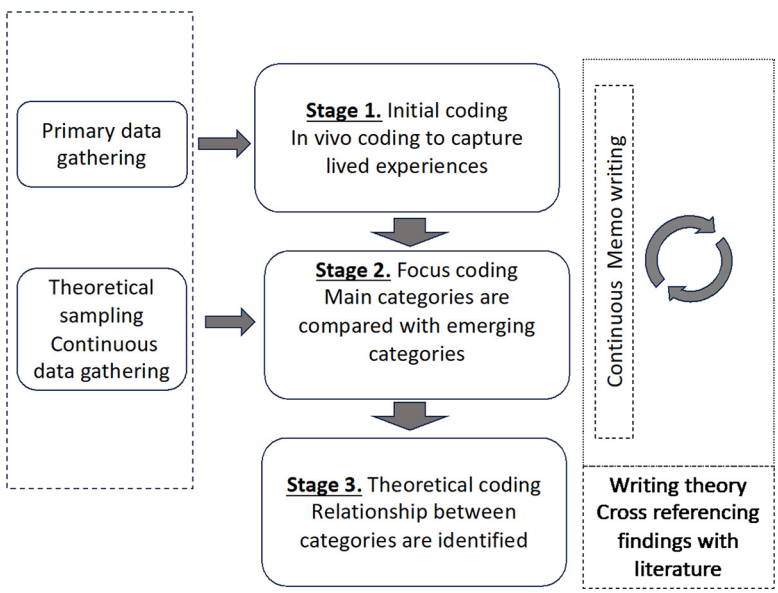
Technological infrastructure implementation

The codes highlight that blockchain represents the enabling infrastructure for "collecting" and storing product and brand data in a single and immutable ledger, where the data are validated under "decentralized control" and are transparently shared among network members:

> The information assets that are managed through blockchain are turning the product identity into an immutable piece of block, and this is because the technology carries records of this information on a distributed network so that any information regarding the identity cannot be changed or removed (IA11).

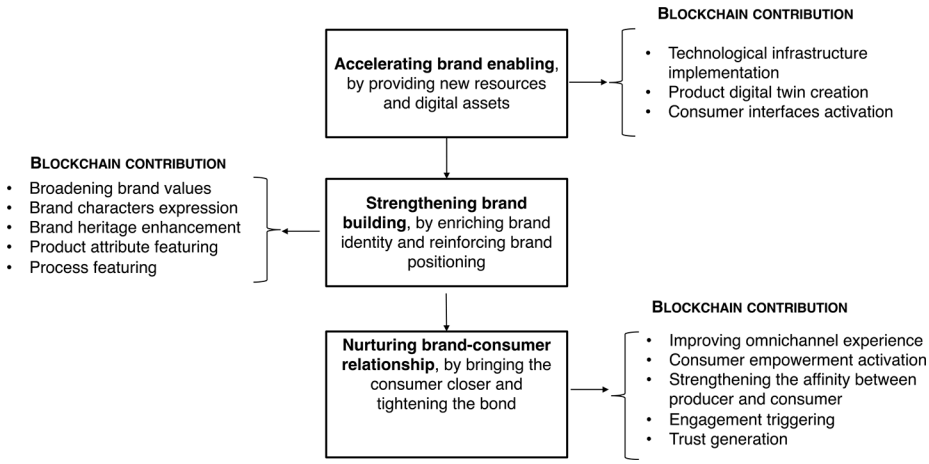
Implementing a blockchain infrastructure requires access to specialized expertise, which is often scarce within firms. Identifying technological partners capable of assisting them in building the optimal configuration is crucial for businesses. For the blockchain infrastructure to achieve its full potential, adoption by all stakeholders within the supply chain is essential.

Figure 1 Coding process and theory building



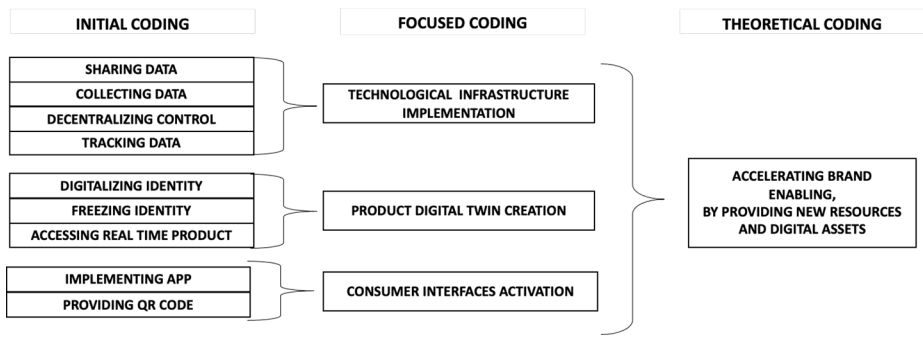
Source: Adapted from Allen and Davey (2018)

Figure 2 The blockchain branding model



Source: Authors' own work

Figure 3 Theoretical coding of "accelerating brand enabling, by providing new resources and digital assets"



Source: Authors' own work

This requires overcoming channel conflicts and embracing a partnership logic:

> To accomplish the project, it was essential to find common ground with our suppliers, seeking win–win solutions in the spirit of partnership. Moreover, this is an area where such efforts are easier, as there are no inherently conflicting positions, as is often the case in discussions on prices and delivery times (IT9).

Product digital twin creation

The technical blockchain infrastructure gives the product a digital "immutable identity." In fact, it creates a *digital twin* of the physical product by translating the entire set of product information into a code block of the distributed ledger, thus making the product's identity unchangeable. Product identity, through blockchain, is not only immutable but also open. This means that through digital applications and device interfaces, digital gateways facilitate data storage in blockchain architecture. Blockchain also enables the enhancement of the digital twin of the product by incorporating data beyond what is available for the physical product (e.g. images or videos):

> What is created through blockchain is the digital twin of the physical product, that transforms the physical product into a virtual product. In addition, within this version, I can insert additional product information (IC1).

Consumer interface activation

Through blockchain, the digital twin of a product can be "accessed in real time" by consumers through a touchpoint. In this context, the interviewees clearly refer to "QR codes," "apps" and smartphones, expanding access options to product and brand information

Strengthening brand building by enriching brand identity and reinforcing brand positioning

The second level of *Blockchain Branding Model* (i.e. *"strengthening brand building by enriching brand identity and reinforcing brand positioning"*) concerns the blockchain's contribution to brand building, with its impact points pertaining to both brand identity and positioning.

This theoretical code emerges from the following five focused codes: "broadening brand values," "brand character expression," "brand heritage enhancement," "product attribute featuring"

and "process featuring." These focused codes are tied to 18 initial codes (Figure 4).

Broadening brand values

Through blockchain, brands can reinforce brand values as well as add new ones. Blockchain enables the brand to assert the value of consumer well-being and product safety, supported by the control of the entire supply chain and product manufacturing processes. It also strengthens the brand's commitment to promoting product biodiversity and communicates the principles of transparency and legality by digitally verifying the authenticity of shared information. This capability stems from the fact that declarations within the blockchain are permanently recorded in a tamper-resistant and transparent ledger that is always accessible to the consumer:

> The values are there, and the blockchain is a tool to make the consumer aware of the company's values, but in addition to this, in my opinion, the blockchain has a value in itself because transparency of information is a value in itself in some way. I see it as if the brands were behind a glass case, is a brand that has no mysteries, that has nothing to hide, and it is a bit like when we enter a restaurant, and the chef decided to put a glass case to show how he works (IA10).

From the interviewees' perspective, transparency becomes a brand value enabled by blockchain technology and not only a characteristic of brand–consumer relationships. As shown below, this is even truer considering the other dimensions of brand identity and positioning empowered by this technology (e.g. brand character expression, brand heritage enhancement) related to the firm's intention to *"bring the consumer into the company" (IA10)*. This could strengthen the connection between the brand and the consumer and consequently enhance the generation of trust.

Utilizing blockchain allows for the validation of authentic value while providing extra assurance to consumers regarding the product's originality and deterring counterfeit goods:

> If this technology is used, the product certainly makes a quality leap because blockchain leads us down a quality path [. . .] there is also the values which are the care food safety and consumer well-being and there is also the control of the entire supply chain, and big advantage also in foreign countries, especially those at risk of counterfeiting (IC1).

Brand character expression

Blockchain "unveils" the *human element* in a product by disclosing the producers and the other actors of the supply chain, such as the farmers and distributors, showing their faces, stories and values and acknowledging their relationships and care for the production processes and the traditions that underpin the product:

> (.) is truly to put our face in blockchain to get the message across to the consumer that behind that product there are companies, people, who get up in the morning at dawn to ensure the quality attached to that product, and I told you this because in the blockchain, the first thing we highlight is where that product comes from and who produced it, the name of the producer and his work story (IT7).

Brand heritage enhancement

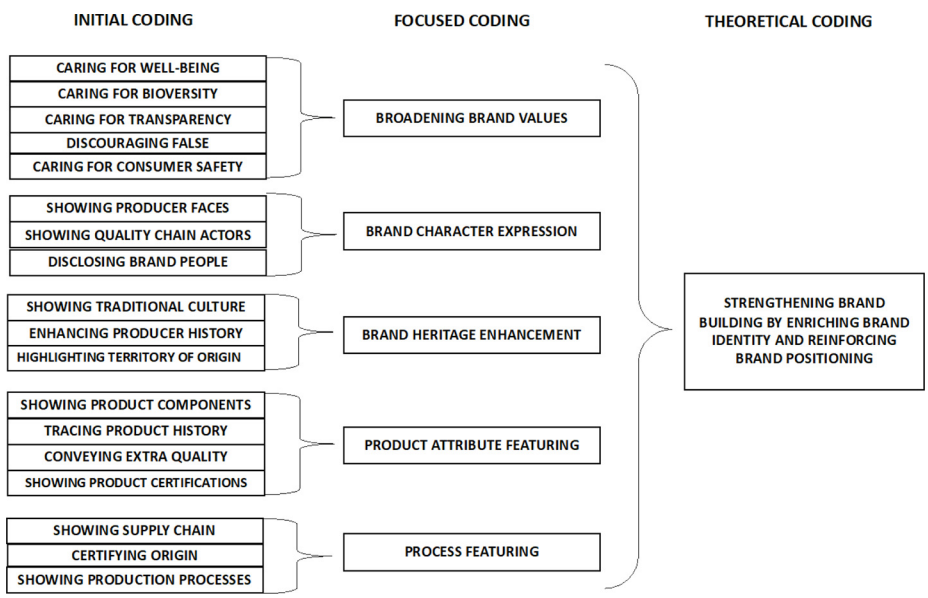
Blockchain is perceived as a gateway to aspects related to the history of the company and the brand, the territory to which it belongs, and the origin of the product. It also embodies the concept of the country of origin, characterized by unique traditions that become a certified and immutable asset of intangible value:

> [We use blockchain] to explain not only the technology and the origin of the product but also the traditions and culture of the territory. These are the elements that make you fall in love with a product. Then, we know very well what we have organized in our regions, which make up a very heterogeneous area. We show our respect for biodiversity and sustainability as well (.) thanks to blockchain, consumers can have direct conversations with these traditions and values and understand them well (IP5).

Product attributes and process features

The blockchain also strengthens the distinctive attributes of a product in a unique way, providing the consumer with the

Figure 4 Theoretical coding of "strengthening brand building by enriching brand identity and reinforcing brand positioning"



Source: Authors' own work

opportunity to access additional information regarding the geographical origin, composition and features of each product (e.g. the materials used and the specific facility and time of production), and the quality certification labels and standards:

> We also say something about the product components and its history that also justifies its extra quality. For example, in the case of milk, we tell you that our dairy cows are raised in the Po River Valley, that they belong to us and that our stables have been certified for animal welfare (IA10).

Blockchain can also be used to enable consumers to trace the product's transformation process by looking at its various stages, detailing the path that occurred from the moment the product was created up to the point when the product reached the shelf:

> (.) we narrate the production process with photos and videos, then add an information kit that gives the feeling of an augmented reality of the product (IP4).

Nurturing the brand–consumer relationship by bringing the consumer closer and tightening the bond

The third level of *Blockchain Branding Model* (i.e. "*nurturing the brand–consumer relationship by bringing the consumer closer and tightening the bond*") represents the impact of blockchain on building stronger and closer relationships with the consumer.

This theoretical code emerges from five focused codes: "improving the omnichannel experience," "greater affinity between the brand and the consumer," "consumer empowerment activation," "consumer engagement triggering" and "trust generation." These focus codes are tied to 16 initial codes (Figure 5).

Improving omnichannel experience

Blockchain creates a new and extremely effective *touchpoint* to establish a channel of automatized relationship between consumers and brands. This relationship is enabled by blockchain consumer interfaces, such as QR codes and apps:

> [. . .] I can also activate that whole part of marketing automation to connect with my consumer by sending the couponing that may be of interest for the consumer. Because the brand blockchain is a touchpoint, it is an additional communication channel, so it is a vehicle for an omnichannel strategy (IA 11).

Greater affinity between the brand and the consumer

Blockchain allows the brand to establish a deep, lasting and personalized dialogue with consumers. This is strictly related to the themes of brand identity and positioning mentioned above, namely, brand character expression, brand heritage enhancement, product attributes and process featuring that could reduce the distance between brands and consumers.

Consumer empowerment activation

By sharing information through QR codes and apps, the brand empowers consumers and enables them to satisfy their desire for personal enrichment. Blockchain also provides access to additional product information that allows them to make an informed choice and fulfills their need for in-depth knowledge and assurance:

> Consumers want to understand the method of farming, because someone wants to start cultivating a garden in his own backyard, and so he wants to be enriched by understanding how each product is grown [. . .] so on a smartphone, just by reading a QR code and watching videos, you can increase your understanding of which individual particle the product is made from (IS6).

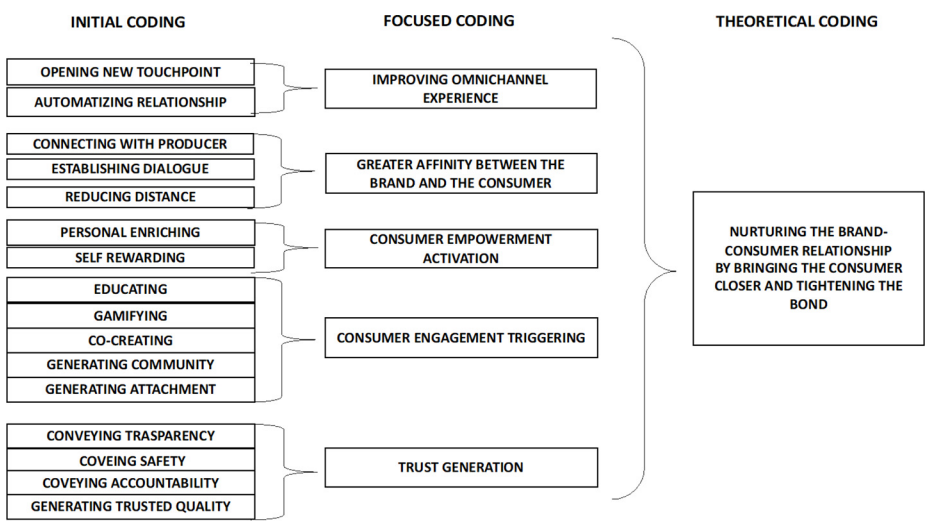
In addition, the achievement of personal *well-being* and health protection goals is tied to the ability to have full control over the nutritional values of the product being conveyed through blockchain:

> It is a sustainable brand narrative for safeguarding production that blockchain creates, integrating both the wellbeing of people and the environment, because consumers need to be self-rewarded, by knowing and understanding what they are buying and what they are eating (IA10).

Consumer engagement triggering

Through blockchain, brands can share tailored information with consumers, enhance their knowledge and awareness of the distinctive features of quality products, and *engage* them in app-based digital games and challenges. Such a direct connection with the consumer fosters the creation of brand *communities*

Figure 5 Theoretical coding of "nurturing the brand–consumer relationship by bringing the consumer closer and tightening the bond"



Source: Authors' own work

where consumers can be involved in creative activities as coproducers of product innovation. In this way, blockchain brings the consumer closer to the brand and sets the conditions for establishing brand attachment:

> Then, everything that I've said is triggered is a connection with the consumer. This means a connection between the consumer and the producer, which is useful for further stimulating the customer to interact, to know, and to be involved in activities with your brand. Even the community that you are going to create is something that brings you closer to the brand and creates that climate of trust, which perhaps is lacking in many situations and today, it's been lost among consumers (IA10).

Trust generation

The blockchain assists the brand in establishing a trust-based relationship with consumers and actors in the supply chain. It is a technological infrastructure capable of initiating a system of mutual relationships founded on accountability, certified quality and the ability to influence consumer choices by leveraging accountability and transparency:

> The point it is a matter of fact is identifying with the consumer choice of that brand by saying I choose this brand because this brand is transparent. In addition, I have over the years developed this idea, that the theme of traceability served to test the technology and to make people understand this type of trust machine and how it could be triggered to generate trust and engagement in consumers (IA11).

As discussed below, trust generation is related to aspects intrinsic to technology and, at the same time, to themes more closely associated with brand building, such as broadening brand values (i.e. the choice of transparency as an identity value) and the company's willingness to tell brand characters and heritage, leading to a closer relationship between the brand and the consumer.

The *Blockchain Branding Model* built with the theoretical and focused codes (Figure 2) could be further deepened by highlighting the relationships among the focused codes as they emerged from the interviews, thus completing the holistic reading of blockchain's impact on brand management process (Figure 6).

Implementing blockchain technological infrastructure is the basis for developing digital twin products and activating consumer interfaces. This sets the stage for building identity, brand positioning and brand-consumer relationships. Owing to the broadening of brand values and the features of product attributes and processes, companies can increase consumer empowerment by intercepting consumers looking for more in-depth information as well as personal enrichment and self-gratification. The other themes of brand identity and brand positioning underpin the progressive closeness between a company and a consumer since the company, using blockchain technology, shows *who* is behind the brand (*brand character expression*, i.e. the people who make the product), *where* the brand comes from (*brand heritage enhancement*, i.e. the history of the product, the producer and the territory), *what* the product is (*product attribute featuring*, i.e. the components of the product, its quality, and certifications) and *how* the product is made (*process featuring*, i.e. the production process and supply chain).

Increased affinity between the brand and the consumer, combined with consumer empowerment, forms the foundation of consumer engagement, which companies can foster through gamification, education, cocreation initiatives, and brand communities.

Activating consumer interfaces (e.g. apps, QR codes) provides an additional communication touchpoint and leverages automation to deliver increasingly personalized stimuli, enriching the consumer's omnichannel experience.

Trust generation becomes highly relevant when the impact of blockchain on the brand–consumer relationship is analyzed. It is related to the technical features of the blockchain, such as transparency, decentralized control and the immutability of identity, and is also connected to the themes belonging to the second level, namely, *"strengthening brand identity and reinforcing brand positioning."* Indeed, trust generation is strictly related to enriched brand identity – with the broadening of brand values toward greater transparency and a focus on consumer well-being and safety – and to reinforced brand positioning on the basis of identity choices that bring the consumer closer to the brand.

Theoretical implications

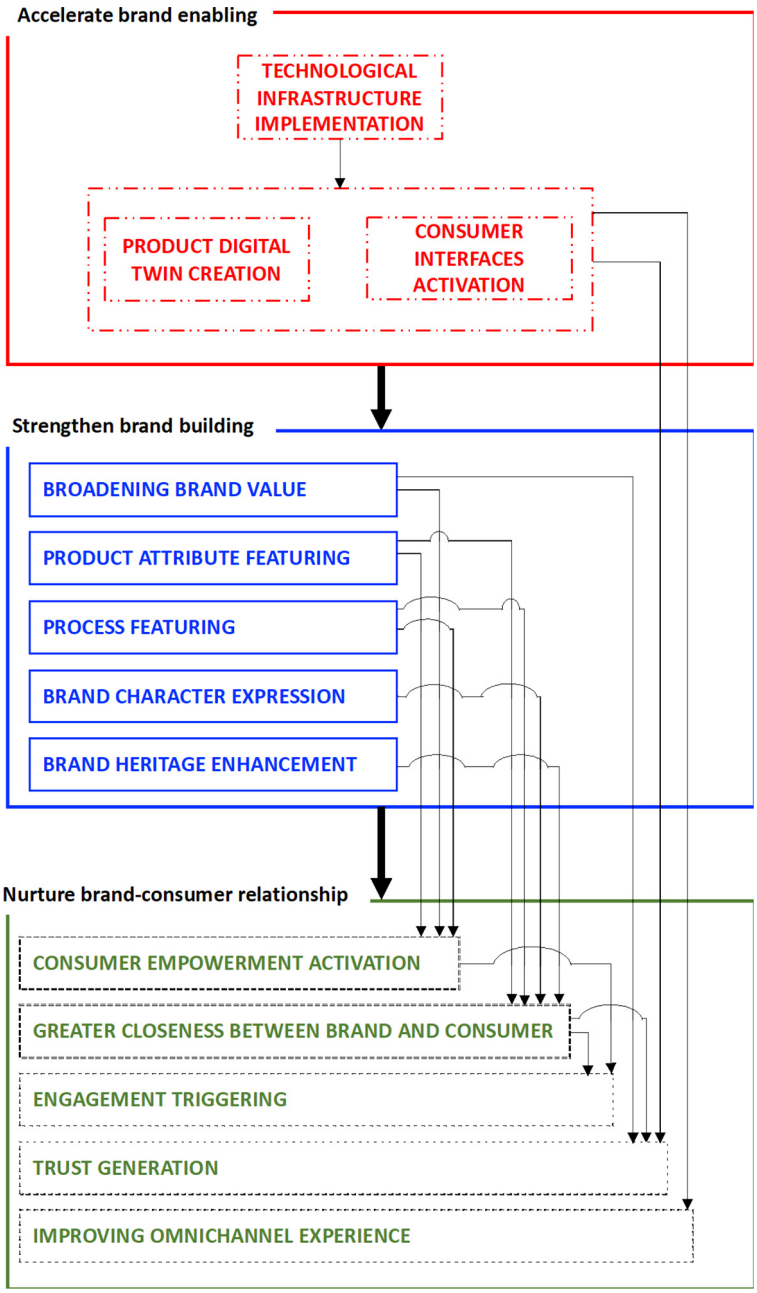
This paper is positioned within the growing strand of research on the impact of digital technologies on branding and, within it, in the field of studies that focus on the effect of adopting blockchain on brand management.

The originality of the study is twofold. First, this work goes beyond purely theoretical perspectives that characterize previous works about blockchain and branding, considering the perspective of experts in blockchain projects. Although the study was conducted in the specific context of the agrifood industry, it offers original insights that could be extended to other sectors where blockchain technology has been assumed to be highly relevant.

Second, the study overcomes the fragmentation of the previous contributions, reconstructing managers' points of view and bringing them to unity. In this way, it offers a holistic perspective on blockchain contribution to the brand management process, capturing its impact points and outcomes, and building a model that allows an understanding of how, through blockchain technology, brand management activities can be enhanced and strengthened. Three levels of brand management in which blockchain contribution is relevant emerged by the analysis (i.e. theoretical codes) and were systematized in the *Blockchain Branding Model*. This technology could: (i) *accelerate brand enabling, by providing new resources and digital assets*, (ii) *strengthen brand building, by enriching brand identity and reinforcing brand positioning* and (iii) *nurture brand-consumer relationship, by bringing the consumer closer and tightening the bond*. The study further explores the connections between the focused codes in the three levels of *Blockchain Branding Model*, providing a comprehensive reading of the influence of blockchain on brand management process.

Considering all three levels of the brand management process in the *Blockchain Branding Model*, the present study provides original theoretical insights. First, by highlighting blockchain's contribution to brand enabling, brand building and brand-consumer relationship, the proposed model reveals how blockchain is not only a tool for enhancing the effectiveness of brand marketing communication (Peres *et al.*, 2023) or strengthen consumer trust, as highlighted by most works on this topic (e.g. Ferreira da Silva and Moro, 2021; Le, 2024), but can be used throughout the brand management

Figure 6 The blockchain branding model: relationships between themes



Source: Authors' own work

process to create value in several ways for both the consumer and the firm.

With regard to the first level, namely, *"accelerating brand enabling, by providing new resources and digital assets,"* following previous studies that focused on digital assets that enable connection with the consumer (Redler and Corvino, 2023; Boukis, 2020; Xie *et al.*, 2024), the *Blockchain Branding Model* further highlights how this connection with the brand can be effectively activated by brand managers by tokenizing products, turning them into an immutable piece of block of the digital ledger.

While previous contributions – mainly focused on social media (Rokka and Canniford, 2016; Rossolatos, 2019) – highlighted that brand characteristics can be altered and diluted by consumers through digital technologies, this study shows that blockchain has the opposite effect and can be used to prove that a brand is an immutable asset with an inalterable identity. In other words, blockchain nurtures the truth and could increase the alignment between what marketers want to convey and the meanings consumers attach to brands (Batra, 2019).

Regarding the second level of the *Blockchain Branding Model*, namely, *"strengthening brand building, by enriching brand identity and reinforcing brand positioning,"* further relevant theoretical aspects involving tangible and intangible aspects of the brand emerge. Through the digital twin, blockchain allows for

the reinforcement of functional product features, making the consumer aware of the product's intrinsic aspects. The blockchain goes beyond product appearance; in fact, the technology allows brands to append additional information concerning production processes and territories of origin, enabling the consumer to reconstruct each product's manufacturing history autonomously through digital interfaces (i.e. QR codes or apps). In this way, blockchain helps consumers understand and assess the source of products' quality and provenance (Montecchi *et al.*, 2019), potentially acting to solve ambiguities regarding their value and performance (Selnes, 1993).

These findings also address several issues raised in the emerging literature on blockchain-based products (e.g. NFTs), such as those highlighting the marketing differences between blockchain-based products and physical goods (Hofstetter *et al.*, 2022; Hofstetter *et al.*, 2024) or exploring the contribution that NFTs can make to branding within specific product categories (Xie *et al.*, 2023).

This study highlights how blockchain also strengthens the intangible aspects of brands, which, alongside tangible ones, are at the basis of the trust construction that emerged in the third level. The findings reveal that blockchain intervenes in symbolic areas pertaining to values, heritage, and brand character, which are considered key aspects in constructing brand identity and reinforcing consumer ties in the current market environment; in addition, blockchain reinforces values that are recognized as drivers of brands' present behavior (Keller, 2023). In fact, findings show that "blockchain brands" can reinforce their role as responsible actors by openly sharing their concerns for societal well-being and respect for the environment (Torelli *et al.*, 2012).

The findings also show that, through blockchain, brand managers can convey brand character by showing its truly human features. In fact, blockchain adds reality and concreteness to the brand personality (Aaker, 1997) by making it visible, accountable, and linked to the faces of product makers such as the entrepreneur, the suppliers, and the workers. This finding reinforces previous works' findings and provides new insights about the positive impact that blockchain has on brand positioning through storytelling (Boukis, 2020). Indeed, the process of showing the persons could lead to the development of a brand anthropomorphization strategy that has been deepened for other enabling technologies (e.g. artificial intelligence) (Vernuccio *et al.*, 2023).

The work also adds aspects related to the content that defines positioning and relates to the human dimension of the brand (Aggarwal and McGill, 2012), its heritage and values, showing how blockchain fosters a logical organization of a coordinated narrative of aspects regarding the brand's present and past and ties them together (Keller, 2021, 2023). This finding confirms the role of blockchain in defining brand positioning, as already highlighted in the literature (Boukis, 2020), and in explaining how technology supports the brand in constructing a consistent brand narrative in its intrinsic and extrinsic elements.

With respect to the third level of the model, namely, *"nurturing brand–consumer relationship by bringing the consumer closer and tightening the bond,"* this study adds further important considerations to the topic of brands and technology in the brand–consumer relationship. Findings confirm that blockchain, like other digital technologies such as phygital (Banik and Gao, 2023), augmented reality (Javornik *et al.*, 2021) and artificial intelligence (Cheng and Jiang, 2022), can lay the groundwork for constructing brand attachment through consumer activation (Boukis, 2020, 2022), consumer empowerment and community building (Ante *et al.*, 2024; Colicev, 2022).

The findings confirm previous theories that assumed that blockchain is a technology capable of enhancing a brand's capacity to establish meaningful relationships with the consumer (Boukis, 2020) and to create consumer engagement through gamification activities (Colicev, 2022; Peres *et al.*, 2023). The work also shows that by using blockchain, the company can open a new "touchpoint" to interact with the consumer and nurture the relationship through active participation. These results are consistent with those of Hakkarainen and Colicev (2023), who argued in their conceptual study that blockchain can engage consumers in product cocreation activities that enhance brands' product innovation capabilities, and with Ramaswamy and Ozcan (2016), who stated that blockchain acts in markets as an interactive platform that activates a process of brand value cocreation. Concerning the trust generation, the findings highlight that it is not solely linked to the technical features of blockchain, as emphasized in previous studies, but also to the technology's contribution to enhancing brand identity – by extending brand values toward transparency and well-being – and strengthening brand positioning, which bring consumers closer to the brand.

In conclusion, considering the three levels of the *Blockchain Branding Model*, the work adds new elements to previous studies (e.g. about the possible ways in which technology relates to the brand) and contrasts with those supported by other authors (e.g. regarding the negative effects of digital platforms on brand identity). The research also validates and reinforces previous findings (e.g. concerning how blockchain reinforces the intangible aspects of the brand) and integrates existing models (e.g. showing how blockchain can add reality and concreteness to the construct of "brand personality"). These aspects complement the main contribution on constructing a theoretical model that provides a holistic and comprehensive view of blockchain technology's contribution to brand management process.

Managerial contributions

This study has significant managerial implications. Indeed, the findings prove that blockchain has emerged as a valuable tool for helping brand managers navigate an intricate and demanding competitive environment. The *Blockchain Branding Model* can be a useful tool both when considered as a whole and when focusing on one or more of its levels.

The model as a whole could support brand managers with a strategic viewpoint, providing an overview of the steps in the process of integrating blockchain within branding strategies and the effects that brand managers can create.

Looking at the individual levels of the model, the first of these, *"accelerating brand enabling,"* draws managers' attention to the organizational implications and blockchain's need for technical partners. Indeed, marketers' use of blockchain

requires acquiring knowledge of its application, making it essential to integrate technological expertise with managerial practice.

From the experience of the interviewed informants, the work suggests how relevant it is for managers to work on blockchain projects through an open and ecosystem approach involving partnerships and market alliances with technology companies that can support the implementation of blockchain projects from a technical point of view. This aspect represents a key element that enables brand managers to fully exploit blockchain's potential to be deployed to create sustainable brand value. From this perspective, the work emphasizes the need to include all supply chain actors in blockchain projects to fully implement transparent information, to better convey processes and product characteristics and to relate them to the desired positioning objectives. The lack of proper integration, for example, of suppliers or producers of raw materials, could reduce the effectiveness of the benefits of blockchain for brand building and management.

By focusing on the second level (i.e. *"strengthening brand building"*), managers can have a more concrete and operational perspective of brand management. This part of the model represents a valuable tool for brand managers to have a unified and complete view of the individual pieces on which to intervene to compose the mosaic, which is the brand system comprising people who are behind the brand (i.e. *"brand character expression"*), the history of the brand and the territory from which it comes (i.e. *"brand heritage enhancement"*), the product characteristics that can differentiate the product from its competitors (i.e. "*product attribute featuring"*), and how the product is made (i.e. *"process featuring"*). Brand managers must consider the potential of blockchain technology in strengthening brand building; indeed, this technology can enhance both tangible and intangible elements, effectively integrating the present and the past.

Analyzing the third level of the model, namely, *"nurturing the brand–consumer relationship"*, managers can understand how blockchain offers an analytical range of options they can draw on to (a) activate relationships with consumers, opening a new channel of communication, encouraging a dialogue, and automatizing the relationship management; (b) increase consumers' empowerment, enhancing their knowledge and contributing to their self-reward; (c) engage customers, by activating tools such as those related to gamification, value cocreation and community building; and (d) generate and strengthen trust, enhancing aspects related to transparency,

Table 2 Area of further research avenues

Level of the blockchain branding model	Further research questions
Brand enabling	
	• How could the interaction between blockchain and other enabling technologies contribute to brand management?
	• What skills should brand managers acquire to manage blockchain projects?
	• What typology of blockchain technology (NFTs, traceability systems, cryptocurrencies, smart contracts) is more effective in brand management?
	• What are the key success factors of a partnership aimed at developing blockchain projects?
	• Are there any characteristics that a digital twin must necessarily have?
Brand building	
	• How could blockchain contribute to brand anthropomorphization strategy?
	• Which aspects of brand personality prevail with the use of blockchain?
	• Can the use of blockchain strengthen the country-of-origin effect?
	• How could blockchain contribute to strengthen brand positioning?
	• How could blockchain contribute to the enhancement of brand heritage?
Brand-consumer relationship	
	• How does blockchain impact consumer-based brand equity?
	• How does blockchain influence brand image?
	• What emotional responses have consumer toward brands that employ blockchain?
	• What are the antecedents of consumer engagement with brands?
	• How does blockchain influence consumer judgments toward a brand?
	• How does blockchain influence consumer perception of brand performance?
	• Does blockchain influence consumer feelings toward brands?
	• Can blockchain generate brand love and/or brand hate?
	• Does the use of blockchain increase brand advocacy?

Source(s): Authors' own work

reliability and quality of both the product and production process.

Limitations and further research directions

This study has several limitations that are needed for possible future lines of theoretical development and can guide researchers in investigating aspects that have emerged from the work. Regarding its limitations, this research focuses exclusively on Italy. Future studies could enhance the proposed framework by including other countries as observation points or by conducting cross-country analyses. This could also deepen the understanding of the influence of culture on the country level of adoption of the technology and on manager viewpoints with respect to blockchain and its relationship with the brand, contributing to enriching the complexity of the model.

The work focuses on the food industry, and this might suggest the relevance of widening the investigation by including other sectors. For this reason, it would be relevant to replicate studies in other industries that extensively use blockchain technology, such as automotive or fashion, which are also referred to in previous theoretical contributions (Colicev, 2022; Peres *et al.*, 2023). In fact, particular features in these industries may offer additional insights into the interaction between blockchain and brands.

The study focuses solely on the managers' perspective, while the validation of the relevance of the technology's effectiveness in supporting branding activities could be achieved by investigating consumers' points of view considering the three levels of the Blockchain Branding Model (Table 2).

Further analyses could focus on deepening the impact of blockchain on brand awareness, image, and consumers' judgments about brands. Future work could also study the emotional response of consumers to brand stimuli activated by blockchain, the types of relationships that brands establish with consumers via blockchain and the role of consumers' personal characteristics.

References

Aaker, J.L. (1997), "Dimensions of brand personality", *Journal of Marketing Research*, Vol. 34 No. 3, pp. 347-356, doi: 10.2307/3151897.

Aggarwal, P. and McGill, A.L. (2012), "When brands seem human, do humans act like brands? Automatic behavioral priming effects of brand anthropomorphism", *Journal of Consumer Research*, Vol. 39 No. 2, pp. 307-323, doi: 10.1086/662614.

Aguirre, E., Mahr, D., Grewal, D., De Ruyter, K. and Wetzels, M. (2015), "Unraveling the personalization paradox: the effect of information collection and trust-building strategies on online advertisement effectiveness", *Journal of Retailing*, Vol. 91 No. 1, pp. 34-49, doi: 10.1016/j.jretai.2014.09.005.

Allen, N. and Davey, M. (2018), "The value of constructivist grounded theory for built environment researchers", *Journal of Planning Education and Research*, Vol. 38 No. 2, pp. 222-232, doi: 10.1177/0739456X17695195.

Ante, L., Saggu, A., Schellinger, B. and Wazinski, F.-P. (2024), "Voting participation and engagement in blockchain-based fan tokens", *Electronic Markets*, Vol. 34 No. 1, p. Art, 26, doi: 10.1007/s12525-024-00709-z.

Antoniadis, I., Kontsas, S. and Spinthiropoulos, K. (2019), "Blockchain applications in marketing", 7th International Conference on Contemporary Marketing.

Banik, S. and Gao, Y. (2023), "Exploring the hedonic factors affecting customer experiences in phygital retailing", *Journal of Retailing and Consumer Services*, Vol. 70, p. 103147, doi: 10.1016/j.jretconser.2022.103147.

Batra, R. (2019), "Creating brand meaning: a review and research agenda", *Journal of Consumer Psychology*, Vol. 29 No. 3, pp. 535-546, doi: 10.1002/jcpy.1122.

Bonetti, E., Bartoli, C. and Mattiacci, A. (2023), "Applying blockchain to quality food products: a marketing perspective", *British Food Journal*, Vol. 124 No. 9, doi: 10.1108/BFJ-12-2022-1085.

Boukis, A. (2020), "Exploring the implications of blockchain technology for brand–consumer relationships: a future research agenda", *Journal of Product & Brand Management*, Vol. 29 No. 3, pp. 307-320, doi: 10.1108/JPBM-03-2018-1780.

Boukis, A. (2022), "Exploring the sources of Consumer-Based brand equity in the cryptocurrency market", *Review of Marketing Science*, Vol. 20 No. 1, pp. 233-255, doi: 10.1515/roms-2022-0025.

Boukis, A. and Magrizos, S. (2018), "Managing brands in the blockchain era", *Annual Macromarketing Conference Proceedings*, pp. 2-4.

Charmaz, K. (2001), "Grounded theory: Methodology and theory construction", *International Encyclopedia of the Social & Behavioral Sciences*, Vol. 10, pp. 6396-6399, doi: 10.1016/B978-0-08-097086-8.44029-8.

Charmaz, K. (2006), *Constructing Grounded Theory. A Practical Guide through Qualitative Analysis*, Sage Publications, London.

Chen, Q., Choi, B.J. and Lee, S.J. (2025), "Tailoring customer segmentation strategies for luxury brands in the NFT market–the case of SUPERGUCCI", *Journal of Retailing and Consumer Services*, Vol. 82, p. 104121, doi: 10.1016/j.jretconser.2024.104121.

Cheng, Y. and Jiang, H. (2022), "Customer–brand relationship in the era of artificial intelligence: understanding the role of chatbot marketing efforts", *Journal of Product & Brand Management*, Vol. 31 No. 2, pp. 252-264, doi: 10.1108/JPBM-05-2020-2907.

Colicev, A. (2022), "How can non-fungible tokens bring value to brands", *International Journal of Research in Marketing*, Vol. 40 No. 1, pp. 30-37, doi: 10.1016/j.ijresmar.2022.07.003.

Deventer, C., de Sousa, V.A. and Pirnay, L. (2024), "NFTByBrands: value identification framework for analysis and design of NFT initiatives", *International Journal of Electronic Commerce*, Vol. 28 No. 1, pp. 33-62, doi: https://doi.org/10.1080/10864415.2023.2295070.

Du, W., Derek, Pan, S.L., Leidner, D.E. and Ying, W. (2019), "Affordances, experimentation and actualization of FinTech: a blockchain implementation study", *The Journal of Strategic Information Systems*, Vol. 28 No. 1, pp. 50-65, doi: 10.1016/j.jsis.2018.10.002.

Dwivedi, Y.K., Ismagilova, E., Hughes, D.L., Carlson, J. and Wang, Y. (2021), "Setting the future of digital and social media marketing research: perspectives and research propositions", *International Journal of Information*

Management, Vol. 59, p. 102168, doi: 10.1016/j.ijinfomgt.2020.102168.

Erevelles, S., Whelan, B. and Bulusu, P. (2020), "The blockchain brand", *Advances in Consumer Research*, Vol. 48, pp. 314-315.

Ertemel, A.V. (2018), "Implications of blockchain technology on marketing", *Journal of International Trade, Logistics and Law*, Vol. 4 No. 2, pp. 35-44, available at: https://ssrn.com/abstract=3351196

Faulkner, S.L. and Trotter, S.P. (2017), "Data saturation", *The International Encyclopedia of Communication Research Methods*, pp. 1-2, doi: 10.1002/9781118901731.iecrm0060.

Ferreira da Silva, C.F. and Moro, S. (2021), "Blockchain technology as an enabler of consumer trust: a text mining literature analysis", *Telematics and Informatics*, Vol. 60, p. 101593, doi: 10.1016/j.tele.2021.101593.

Frizzo-Barker, J., Chow-White, P.A., Adams, P.R., Mentanko, J., Ha, D. and Green, S. (2020), "Blockchain as a disruptive technology for business: a systematic review", *International Journal of Information Management*, Vol. 51, p. 102029, doi: 10.1016/j.ijinfomgt.2019.10.014.

Gatomatis, P. and Bogonikolos, N. (2021), "Using blockchain for business & marketing improvement", *Journal of Marketing Development and Competitiveness*, Vol. 15 No. 2, pp. 37-42.

Gleim, M.R. and Stevens, J.L. (2021), "Blockchain: a game changer for marketers?", *Marketing Letters*, Vol. 32 No. 1, pp. 123-128, doi: 10.1007/s11002-021-09557-9.

Goodman, L.A. (1961), "Snowball sampling", *The Annals of Mathematical Statistics*, Vol. 32 No. 1, pp. 148-170, doi: 10.1214/aoms/1177705148.

Hakkarainen, T. and Colicev, A. (2023), "Blockchain-enabled advances (BEAs): implications for consumers and brands", *Journal of Business Research*, Vol. 160, p. 113763, doi: 10.1016/j.jbusres.2023.113763.

Hoang, L.C., Do, M.H.T., Quang, H.T. and Hoang, T.H. (2024), "Blockchain technology applications in retail branding: insights from retailers in the developing world", *Thunderbird International Business Review*, Vol. 66 No. 1, pp. 3-18, doi: 10.1002/tie.22367.

Hofstetter, R., De Bellis, E., Brandes, L., Clegg, M., Lamberton, C., Reibstein, D. and Zhang, J.Z. (2022), "Crypto-marketing: how non-fungible tokens (NFTs) challenge traditional marketing", *Marketing Letters*, Vol. 33 No. 4, pp. 705-711, doi: 10.1007/s11002-022-09639-2.

Hofstetter, R., Fritze, M.P. and Lamberton, C. (2024), "Beyond scarcity: a social value-based lens for NFT pricing", *Journal of Consumer Research*, Vol. 51 No. 1, pp. 140-150, doi: 10.1093/jcr/ucad082.

Hollebeek, L.D., Sharma, T.G., Pandey, R., Sanyal, P. and Clark, M.K. (2022), "Fifteen years of customer engagement research: a bibliometric and network analysis", *Journal of Product & Brand Management*, Vol. 31 No. 2, pp. 293-309, doi: 10.1108/JPBM-01-2021-3301.

Holmes, F. (2023), "Investing In Web3 companies: riding the wave of the next digital revolution", Forbes, available at: www.forbes.com/sites/greatspeculations/2023/06/26/investing-in-web3-companies-riding-the-wave-of-the-next-digital-revolution/?sh=43f958224bb5

Javornik, A., Marder, B., Pizzetti, M. and Warlop, L. (2021), "Augmented self - The effects of virtual face augmentation on consumers' self-concept", *Journal of Business Research*, Vol. 130, pp. 170-187, doi: 10.1016/j.jbusres.2021.03.026.

Keller, K.L. (2020), "Consumer research insights on brands and branding: a JCR curation", *Journal of Consumer Research*, Vol. 46 No. 5, pp. 995-1001, doi: 10.1093/jcr/ucz058.

Keller, K.L. (2006), "Brands and branding: research findings and future priorities", *Marketing Science*, Vol. 25 No. 6, pp. 740-759, doi: 10.1287/mksc.1050.0153.

Keller, K.L. (2021), "The future of brands and branding: an essay on multiplicity, heterogeneity, and integration", *Journal of Consumer Research*, Vol. 48 No. 4, pp. 527-540, doi: 10.1093/jcr/ucab063.

Keller, K.L. (2023), "Looking forward, looking back: developing a narrative of the past, present and future of a brand", *Journal of Brand Management*, Vol. 30 No. 1, pp. 1-8, doi: 10.1057/s41262-022-00309-2.

Le, M.T. (2024), "Fostering product quality and brand trust by QR code traceability and customer reviews: the moderating role of brand reputation in blockchain", *The Journal of High Technology Management Research*, Vol. 35 No. 1, p. 100492, doi: 10.1016/j.hitech.2024.100492.

Leek, S. and Christodoulides, G. (2011), "A literature review and future agenda for B2B branding: challenges of branding in a B2B context", *Industrial Marketing Management*, Vol. 40 No. 6, pp. 830-837, doi: 10.1016/j.indmarman.2011.06.006.

Malik, N., Wei, Y., Appel, G. and Luo, L. (2023), "Blockchain technology for creative industries: current state and research opportunities", *International Journal of Research in Marketing*, Vol. 40 No. 1, pp. 38-48, doi: 10.1016/j.ijresmar.2022.07.004.

Mills, J., Bonner, A. and Francis, K. (2006), "The development of constructivist grounded theory", *International Journal of Qualitative Methods*, Vol. 5 No. 1, pp. 25-35, doi: 10.1177/160940690600500103.

Montecchi, M., Plangger, K. and Etter, M. (2019), "It's real, trust me! Establishing supply chain provenance using blockchain", *Business Horizons*, Vol. 62 No. 3, pp. 283-293, doi: 10.1016/j.bushor.2019.01.008.

Ølnes, S., Ubacht, J. and Janssen, M. (2017), "Blockchain in government: benefits and implications of distributed ledger technology for information sharing", *Government Information Quarterly*, Vol. 34 No. 3, pp. 355-364, doi: 10.1016/j.giq.2017.09.007.

Parris, D.L. and Guzmán, F. (2023), "Evolving brand boundaries and expectations: looking back on brand equity, brand loyalty, and brand image research to move forward", *Journal of Product & Brand Management*, Vol. 32 No. 2, pp. 191-234, doi: 10.1108/JPBM-06-2021-3528.

Peres, R., Schreier, M., Schweidel, D.A. and Sorescu, A. (2023), "Blockchain meets marketing: opportunities, threats, and avenues for future research", *International Journal of Research in Marketing*, Vol. 40 No. 1, pp. 1-11, doi: 10.1016/j.ijresmar.2022.08.001.

Ramaswamy, V. and Ozcan, K. (2016), "Brand value co-creation in a digitalized world: an integrative framework and research implications", *International Journal of Research in Marketing*, Vol. 33 No. 1, pp. 93-106, doi: 10.1016/j.ijresmar.2015.07.001.

Redler, J. and Corvino, M. (2023), "The significance of digital twins for the comprehensive brand experience", *Journal of*

Brand Strategy, Vol. 12 No. 1, pp. 76-95, doi: 10.69554/WDUR8840.

Robson, S. and Foster, A. (1989), *Qualitative Research in Action*, Butterworth-Heinemann Ltd, Stoughton, Hodder, London.

Rokka, J. and Canniford, R. (2016), "Heterotopian selfies: how social media destabilizes brand assemblages", *European Journal of Marketing*, Vol. 50 Nos 9/10, pp. 1789-1813, doi: 10.1108/EJM-08-2015-0517.

Rossolatos, G. (2019), "Negative brand meaning co-creation in social media brand communities: a laddering approach using NVivo", *Psychology & Marketing*, Vol. 36 No. 12, pp. 1249-1266, doi: 10.1002/mar.21273.

Saldaña, J. (2013), *The Coding Manual for Qualitative Researchers*, Sage Publications, Thousand Oaks, CA.

Selnes, F. (1993), "An examination of the effect of product performance on brand reputation, satisfaction and loyalty", *European Journal of Marketing*, Vol. 27 No. 9, pp. 19-35, doi: 10.1108/03090569310043179.

Shankar, A., Kumar, A., Behl, A., Pereira, V. and Budhwar, P. (2024), "You or an imposter? How to protect brand identity in a business-to-business context?", *Industrial Marketing Management*, Vol. 116, pp. 93-105, doi: 10.1016/j.indmarman.2023.12.001.

Sinkovics, R.R., Penz, E. and Ghauri, P.N. (2009), "Enhancing the trustworthiness of qualitative research in international business", *Management International Review*, Vol. 48 No. 6, pp. 689-714, doi: 10.1007/s11575-008-0103-z.

Stallone, V., Wetzels, M. and Klaas, M. (2021), "Applications of blockchain technology in marketing—a systematic review of marketing technology companies", *Blockchain: Research and Applications*, Vol. 2 No. 3, p. 100023, doi: 10.1016/j.bcra.2021.100023.

Statista (2020), "Global blockchain in agriculture and food market value 2020 & 2026", available at: www.statista.com/statistics/1327251/global-blockchain-in-agriculture-and-food-market-by-type/

Statista (2023), "Worldwide spending on blockchain solutions from 2017 to 2024", available at: www.statista.com/statistics/800426/worldwide-blockchain-solutions-spending/

Strauss, A. and Corbin, J.M. (1997), *Grounded Theory in Practice*, Sage, London.

Sung, E.C., Kwon, O. and Sohn, K. (2023), "NFT luxury brand marketing in the metaverse: leveraging blockchain-certified NFTs to drive consumer behavior", *Psychology & Marketing*, Vol. 40 No. 11, pp. 2306-2325, doi: 10.1002/mar.21854.

Swaminathan, V., Sorescu, A., Steenkamp, J.B.E., O'Guinn, T.C.G. and Schmitt, B. (2020), "Branding in a hyper connected world: refocusing theories and rethinking boundaries", *Journal of Marketing*, Vol. 84 No. 2, pp. 24-46, doi: 10.1177/0022242919899905.

Tan, T.M., Salo, J., Alejandro, T.G.B., Tan, G.W.H., Ooi, K.B. and Dwivedi, Y.K. (2024), "Guest editorial: a blockchain-based approach to marketing in the sharing economy", *Journal of Business Research*, Vol. 177, p. 114639, doi: 10.1016/j.jbusres.2024.114639.

Thornberg, R. and Charmaz, K. (2014), *Grounded Theory and Theoretical Coding, The SAGE Handbook of Qualitative Data Analysis*, Sage Publications, London.

Torelli, C.J., Monga, A.B. and Kaikati, A.M. (2012), "Doing poorly by doing good: corporate social responsibility and brand concepts", *Journal of Consumer Research*, Vol. 38 No. 5, pp. 948-963, doi: 10.1086/660851.

Treiblmaier, H. and Petrozhitskaya, E. (2023), "Is it time for marketing to reappraise B2C relationship management? The emergence of a new loyalty paradigm through blockchain technology", *Journal of Business Research*, Vol. 159, p. 113725, doi: 10.1016/j.jbusres.2023.113725.

Utz, M., Johanning, S., Roth, T., Bruckner, T. and Strüker, J. (2022), "From ambivalence to trust: using blockchain in customer loyalty programs", *International Journal of Information Management*, Vol. 68, p. 102496, doi: 10.1016/j.ijinfomgt.2022.102496.

Veloutsou, C. and Guzman, F. (2017), "The evolution of brand management thinking over the last 25 years as recorded in the journal of product and brand management", *Journal of Product & Brand Management*, Vol. 26 No. 1, pp. 2-12, doi: 10.1108/JPBM-01-2017-1398.

Vernuccio, M., Patrizi, M. and Pastore, A. (2023), "Delving into brand anthropomorphisation strategies in the experiential context of name-brand voice assistants", *Journal of Consumer Behaviour*, Vol. 22 No. 5, pp. 1074-1083, doi: 10.1002/cb.1984.

Vila-Henninger, L., Dupuy, C., Van Ingelgom, V., Caprioli, M., Teuber, F., Pennetreau, D., Bussi, M., *et al.* (2022), "Abductive coding: theory building and qualitative (Re) analysis", *Sociological Methods & Research*, Vol. 53 No. 2, pp. 1-31, doi: 10.1177/00491241211067508.

Xie, Q., Muralidharan, S. and Edwards, S.M. (2024), "Who will buy the idea of non-fungible token (NFT) marketing? Understanding consumers' psychological tendencies and value perceptions of branded NFTs", *International Journal of Advertising*, Vol. 43 No. 6, pp. 987-1015, doi: https://doi.org/10.1080/02650487.2023.2262859.

Xie, Q., Muralidharan, S., Edwards, S.M. and La Ferle, C. (2023), "Unlocking the power of non-fungible token (NFT) marketing: how NFT perceptions foster brand loyalty and purchase intention among millennials and Gen-Z", *Journal of Interactive Advertising*, Vol. 23 No. 4, pp. 356-373, doi: 10.1080/15252019.2023.2258875.

Zhang, J. and Du, M. (2020), "Utilization and effectiveness of social media message strategy: how B2B brands differ from B2C brands", *Journal of Business & Industrial Marketing*, Vol. 35 No. 4, pp. 721-740, doi: 10.1108/JBIM-06-2018-0190.

Appendix 1

Table A1. List of informants

Category and role	Interview code	Organization type	Year of experience in managerial roles	Product involved in blockchain project
Consortium				
Vice president	IC1	Consortium	12 years	Orange
Director	IC2	Consortium	13 years	Balsamic vinegar
Producer				
Marketing vice-president	IP3	Producer	12 years	Mozzarella cheese
Chief innovation officer	IP4	Producer	16 years	Pasta
International sales vice-president	IP5	Producer	22 years	Pistachios
Supplier				
President	IS6	Supplier	over 20 years	Onions
Retail chain				
Head of quality supply chain	IT7	Retail chain	over 20 years	Eggs
Sales director	IT8	Retail chain	18 years	Cheese
Marketing director	IT9	Retail chain	over 20 years	Ham
Consultancy firms involved in blockchain projects of brands				
Head of agriculture and environment practice	IA10	Consultancy firm	13 years	Orange
Partner	IA11	Consultancy firm	14 years	Mozzarella cheese

Source(s): Authors' own work

Appendix 2. Interview guide

This study investigates the impact blockchain has on brand management. Many companies, including your company/organization, have already ventured into blockchain projects. Given the adoption of this technology, we ask a few questions. While responding, please consider the firm/organization you belong to and other successful experiments you know of:

- What are the most relevant activities a brand should preliminarily undertake to exploit blockchain's benefits for branding?
- What are the main difficulties faced in implementing a blockchain project?
- What impacts do you think blockchain can have on brand management?
- What impacts do you think blockchain can have on consumer perceptions and behaviors?
- What are the most significant effects of blockchain adoption on the relationship with consumers?

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