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BLOCK CHAIN AND DIGITAL MARKETING: OPPORTUNITIES AND CHALLENGES

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Abstract: Blockchain has emerged as a highly promising technology in the IT domain. It is an open, immutable, distributed public ledger that can be accessed by several parties involved in the transaction and acts as a universal depository of all transactions between the involved parties. The objective of this paper is to find out its usefulness in marketing. The increasing acceptance of crypto currency worldwide is one of the major factors driving market growth. Commercial and central banks across the world are now using Blockchain technology for payment processing and issuing of their digital currencies

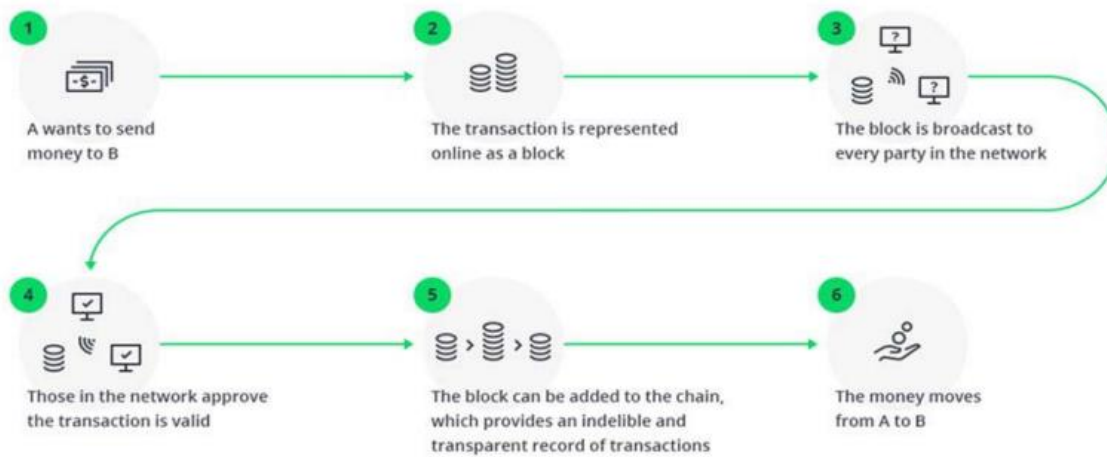
Key Word: Block Chain, Digital Marketing, supply chain, crypto currencies

I. INTRODUCTION

Blockchain has emerged as a highly promising technology in the IT domain. It is an open, immutable, distributed public ledger that can be accessed by several parties involved in the transaction and acts as a universal depository of all transactions between the involved parties. The increasing acceptance of crypto currency worldwide is one of the major factors driving market growth. Commercial and central banks across the world are now using Blockchain technology for payment processing and issuing of their digital currencies. The purpose of this research article is to find out the objective of using block chain and tries to find out its role in developing and implementing marketing strategy.

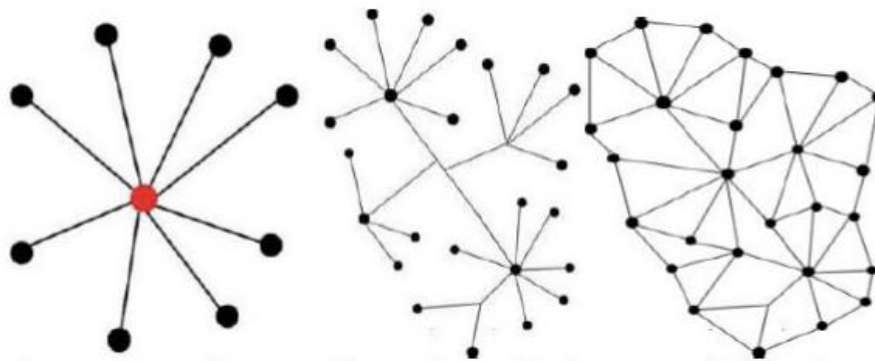
Block chain is a chain of blocks that contain information. It is a shared, immutable ledger that facilitates the process of recording transaction and tracking assets in a business network. An assets can be tangible (a house, car, cash, and land) or intangible (intellectual property, patents, copyrights, branding). The data which is stored inside a block depends on the type of block chain. For example, A Bit coin Block contains information about the sender, Receiver, number of bit coins to be transferred. A block chain is a growing list of records, called blocks that are securely linked together using cryptography.

In its generic form, Blockchain technology refers to a fully distributed system for cryptographically capturing and storing a consistent, immutable, linear event log of transactions between networked actors. This is functionally similar to a distributed ledger that is consensually kept, updated, and validated by the parties involved in all the transactions within a network. In such a network, block chain technology enforces transparency and guarantees eventual, system-wide consensus on the validity of an entire history of transactions. As current block chain technology can not only process monetary transactions but can also ensure that transactions comply with programmable rules in the form of “smart contracts” (Tschorsch and Scheuermann 2016), it allows even parties who do not fully trust each other to conduct and reliably control mutual transactions without relying on the services of any trusted middlemen. This may be one reason why nearly all banks are currently engaged in developing a vision of what this technology means for their business (Glaser 2017).

Figure 1 Technologies of blockchain (see online version for colours)

Source: From Redka (2018) (Attaran, 2019).

Block chains are typically managed by a peer to peer network for use as a publicly distributed ledger. Crypto currencies- Most crypto currencies use block chain technology to record transactions .For example, the bite based on block chain on group which would be headed by David Marcus.

Figure2 Central Structure b) Non-decentralized Structure c) Diffused Structure

Source: (Oğuzhan Taş, 2018, s. 374).

Financial Services

According to reason many banks have expressed interest in implementing distributed ledgers for use in banking and are cooperating with companies creating private Block chains and according to a September 2016. IBM study, this is occurring faster than expected.

Supply Chain-There have been several different efforts to employ block chain in supply chain management.

Table 1 Real-world applications of blockchain technology across different categories

| Categories | Description | Real-world applications |
|--------------------------------------|--|--|
| Static registry | <ul style="list-style-type: none"> • Manage registry of asset ownership • Provide automation on specific assets | <ul style="list-style-type: none"> • Tracking of containers during the shipping process • Gift and ownership • Digital assets (stocks, bonds, shares) |
| Digital identity | <ul style="list-style-type: none"> • Store, confirm and distribute identity-related info • Easily revise personal data or other data | <ul style="list-style-type: none"> • Enable user to easily access proof of bank/credit card identity |
| Smart contracts | <ul style="list-style-type: none"> • Create and execute semi-autonomous contracts on distributed digital platform • Project for implementation of confidential smart contracts | <ul style="list-style-type: none"> • Cash equity training • Insurance claim payouts • Music distribution • Self-executing wills • Hyperledger fabric |
| Dynamic registry | <ul style="list-style-type: none"> • Exchange of physical and digital assets | <ul style="list-style-type: none"> • Streamlined low transaction settlements to address liquidity mismatches in loans |
| Payments infrastructure | <ul style="list-style-type: none"> • Efficient payment transfers with improved record-keeping | <ul style="list-style-type: none"> • Peer-to-peer lending through bitcoin |
| Verifiable data-copyright protection | <ul style="list-style-type: none"> • Low-cost notary services • Easy access to secure, dynamic information | <ul style="list-style-type: none"> • Events tickets • Storage of intangible assets • Protection of intellectual property • Registry of independent artists' work |

Source: McKinsey & Company (2017)

Table 2 Financial services generating biggest revenues using blockchain technology

| Sectors | Advantages | Net gains/savings |
|-----------------------------------|---|--|
| Trade finance | <ul style="list-style-type: none"> • Lower costs • Speed up turnarounds | <ul style="list-style-type: none"> • Revenue boost of \$14 billion–\$17 billion |
| Cross-border B2B payments | <ul style="list-style-type: none"> • Lower costs and fees | <ul style="list-style-type: none"> • Saving of \$50 billion–\$60 billion |
| Cross-border P2P payments | <ul style="list-style-type: none"> • Lower costs • Improving speeds | <ul style="list-style-type: none"> • Saving of \$3 billion–\$5 billion |
| Repurchase agreement transactions | <ul style="list-style-type: none"> • Lower operational costs • Lower systematic risks | <ul style="list-style-type: none"> • Saving of \$2 billion–\$5 billion |
| Over-the-counter derivative | <ul style="list-style-type: none"> • Reduces operational costs | <ul style="list-style-type: none"> • Saving of \$4 billion–\$7 billion |
| Anti-money laundering management | <ul style="list-style-type: none"> • Reduces duplicated effort • Smooths the onboarding process | <ul style="list-style-type: none"> • Saving of \$4 billion–\$8 billion |
| Identity fraud | <ul style="list-style-type: none"> • Fewer damage payouts • Happier customers | <ul style="list-style-type: none"> • Saving of \$7 billion–\$9 billion |

Source: Parker (2017)

In 2016, the wall street journal reported that the block chain technology company ever ledger was precious commodities. In2016, the wall street journal reported that the block chain technology company ever ledger was partnering with IBMs block chain-based tracking service to trace the origin of diamonds to ensure that they were ethically named.

Food Supply-As of2018, Wal mart and IBM were running a trial to use a block chain backed system for supply chain monitoring for lettuce and spinach-all nodes of the block chain were administered by Walmart and were located on the IBM cloud.

Fashion Industry- There is a no relationship between brands, distributors, and customers in the fashion industry, which will present the sustainable and stable development of the fashion industry. Block chain makes up for this short coming and makes information transparent, solving the difficulty of sustainable development of the industry.

Block chain has important implications for marketing and advertising. But according to The CMO Survey, only 8% of firms rate the use of block chain in marketing as moderately or very important (Moorman, 2018). Although Morabito recognized that the applications of block chain based governance are significant for marketing, there has not been a systematic recording of those potential usages.

Crypto currencies such as Bit coin use block chain-based tokens that enable users to represent and exchange value and tangible externalities without the need for centralized governance architecture to facilitate clearing and to maintain the market's integrity (Avital, 2018).

According to the global Aviation Block chain Market report published by Value Market Research, the entire aviation block chain market has been sub-categorized into end-user, application, deployment and function. Block chain technology can create a more secure, and interoperable environment that is attainable with centralized loyalty databases. The technology appeals for both B2B and B2C loyalty programs as auditability of critical transactions and data is necessary to curb fraudulent activities and support customer advocacy Through real-time access to the block chain platform, marketers can gain visibility over members' profiles, points, purchase patterns, payment history, and promotion responses, which will help them to craft more attractive, valuable, and customized loyalty programs. For example, American Express has integrated the

Hyper ledger block chain to provide reward points to members based on individual products, instead of the spending Behavior at a particular merchant Besides, the decentralized nature of block chain technology also allows members to track their loyalty and reward points, freeing them and marketers from the physical possession of coupons. Additionally, the technology can help to create more value for members by enabling them to trade and exchange their loyalty points.

Empowering Digital Marketing Security

Kalakota and Whinston (1997) define a security threat as a “circumstance, condition, or event with the potential to cause economic hardship to data or network resources in the form of destruction, disclosure, and modification of data, denial of service and/or fraud, waste and abuse”. Information security can be viewed as the heart of information systems, both at the technological and organizational levels. This implies that ensuring a high level of preventative measures and transaction security is a crucial differentiator for many businesses. In the digital world, the delivery of products and services with well-communicated and adequate security is a crucial success factor for brand trust. Similarly, information security is turning into a must have feature as brands become the stewards of consumers’ PII (Madhavaram et al., 2005). This development is referred to by Greenlow (2018) as “Marketing security” which is the real-time control and management of consumers’ PII to prevent data leak ages and abuses. Previous research has shown that information security concerns are a significant barrier to online marketing (Sathye,1999; Udo, 2001). This is because online shopping and e-commerce are based on individuals’ credentials and sensitive information such as home address and credit card details (collectively PII), much of which consumers are very reluctant to provide. The reason for this negative perception is the multitude of potential online threats, which involves data loss or theft, identity theft, credit card information theft, content manipulation, unauthorized account access, database attacks, patent and copyright violations. In the online marketing context, Internet banking still faces security threats through data transaction and transmission attacks or unauthorized uses of bank cards enabled through false authentication Moreover, the application of behavioral targeting (Beales, 2010) requires the need for cookies that are susceptible to cloning or misappropriation by a malicious party. A cookies-based approach and weblog records for tracking shoppers online activities might compromise econsumers’ privacy.

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