Advanced Use of Blockchain for Business and Marketing Improvement

Panagiotis Gatomatis  
University of Patras, Patras, Greece  
Konstantinos Tsiomos  
Blockchain 2050 BV, Rotterdam, The Netherlands  
Nikos Bogonikolos  
Aratos Systems BV, Rijen, The Netherlands

A progressively augmenting demand for trust is observed within the global business environment of 21st century. Recent research sheds light on the disintegration of trust to brands on a global scale. Traditionally, trusted third parties take place to guarantee the trust needed for various business exchanges to take place. Digitalization, propels in peer-to-peer systems and cryptographic techniques have progressed to a point where transactions of currency, like Bitcoin, indeed esteem as within the case of ownership, property rights, securities, etc. can be conducted all over the Web with blockchain technology acting as a trust layer injected into the protocol. Blockchain technology acts as the missing trust layer in the evolution of the Web. “Blockchain is to trust as the Internet is to information”. It can be regarded as the missing trust layer on Internet protocol. The implications of blockchain technology on business and marketing discipline from various aspects are investigated in this paper. Blockchain can be a favorable instrument that empowers brands and clients alike to bypass middlemen and to fashion concrete business bonds. Blockchain enables marketers to obtain reliable data, generate more enhanced analytics, and thus to craft compelling marketing campaigns. In a blockchain-based marketing ecosystem, loyalty programs can be fully integrated and improved. The paper also points the key procedures that marketers need to utilize in order to compete in the rapidly evolving business landscape. Conclusions are drawn about the expected direction of business and marketing improvements as affected by these technological advances, resulting to an established perception that Blockchain technologies can profoundly change positively the economy, the society, the political institutions, and scientific activities.

Keywords: blockchain, business, marketing

Introduction

Nowadays, more and more business experts believe that the blockchain technology will have profound
effects on the nature of companies: how they are funded and managed, how they create value, and how they perform basic functions such as marketing, accounting, and incentivizing people. In some cases, software is expected to eliminate the need for many management functions (Hileman, 2016).

The bright new capability for sellers and buyers to store and exchange value via some secure platform, ledger, or database without the need for traditional intermediaries: this is what blockchain technology is offering to businesses.

Stored and exchanged values are not saved in local repositories; they are represented by transactions recorded in a global spreadsheets or ledgers, and this leverages the resources of a large peer-to-peer network to verify and approve transactions.

A blockchain has several advantages. Most of them are widely known nowadays. We concentrate on three of them which we think as more relevant to the hereby discussed case. Initially, it is distributed: It runs on remote servers around the world, so there is no central database to hack. Further, it is public: Anyone can view it at any time because it resides on the network. And third, it is encrypted: It uses heavy-duty encryption to maintain security.

The Methodology of the Blockchain Technology

Very briefly we can say the following: A distributed database, also known as a ledger, it is shared over a larger computing network. Copies of the shared ledgers exist in each one of the remote servers on the network.

Every block on the chain is a piece of data, which have been mathematically encrypted. Not only that, but there are numerous protocols required before each block is validated. This needs consensus from several others before it is added to the existing chain.

Because of the complex and highly encrypted design, the blockchain has no single point of failure. Hackers can’t simply crack one server node to steal data. They would need to attack every node on the chain, simultaneously.

That means that blockchain is effectively un-hackable.

Let’s describe it alternatively: Blockchain transactions are continuously verified, cleared, and stored by the network in digital blocks that are connected to preceding blocks, thereby creating a chain. Each block must refer to the preceding block to be valid. This structure permanently time-stamps and stores exchanges of value, preventing anyone from altering the ledger. To steal anything of value, a thief would have to rewrite its entire history on the blockchain. Collective self-interest ensures the blockchain’s safety and reliability. Therefore, blockchain provides a powerful mechanism for blowing traditional and centralized models, such as that of a commercial corporation, to bits in a safe and secure way.

And so, that is why we aforesaid that this technology paves the way for “an internet of value” (D. Tapscott & A. Tapscott, 2016), where buyers and sellers can store and exchange valuable assets directly, without any need for intermediaries.

The Induced Change in the Business Framework

Studies are alluding to the possibility that blockchain will be proven as revolutionary on a global scale quite soon. In a recent World Economic Forum it was estimated that a significant portion of global GDP will eventually be stored on blockchain. They predict 10% by the year 2027 (Korizky, 2015). This is quite big news. And then an equally big question arises: “Just how much will blockchain change the global economy?” The
answer is “Too much!”.

Blockchain technology is envisioned to impact all major areas of businesses in the coming years, ultimately causing large-scale disruption to the global economy. Actually, such a disruption has already begun. We will see in the below text six different ways that blockchain is changing business:

**Financial management:** The principles of blockchain technology which were developed to stop banking fraud can also be applied to financial management. Companies can use a blockchain-enabled system to track and manage their budget spending, all the way to final transaction. This reduces the risk of being overcharged for something small hidden in the chain of numerous transactions and also guarantees better performance in the long run. Thus, by adopting blockchain technology, financial executives can avail of better protection, ensuring their ROI doesn’t suffer at the end of the day.

**Human resources management:** Blockchain technology will soon modernize the hiring process, making it possible for human resources staff to verify candidates and current staff much faster. Any concerns of third parties interfering with inaccurate data on job applicants won’t be further an issue. Furthermore, payroll will be streamlined, even for multinational corporations and companies with foreign staff. This is also expected to change how people save for retirement, as more people will invest progressively in blockchain-based cryptocurrencies in the future, rather than linking everything to their home country’s currency and banks.

**Business accounting:** Adopting blockchain technology makes an accountant’s life easier. With blockchain fraud is minimized. Control is maximized. Obscure data are minimized. Transparent data are maximized. Blockchain technology offers together total confidentiality and total anonymity. Transactions are recorded in a non-editable way via blockchain technology. This is revolutionary to accounting books keeping, maintaining and, of course, checking.

**IT and cybersecurity:** Cybersecurity is by all means an incredibly vital part of current economy, globally, because in its absence the economy can be easily disrupted, hacked, and, in some sense, destroyed. Blockchain can shore up this valuable part of the economy. It can record digital transactions and interactions in a secure and efficient way, offering transparency and protection to form a solid foundation that companies can rely on. Blockchain can help businesses better strengthen their security. They can not only do transactions but also store data in a way to be assured on how the transactions are being made and also make their data immutable in nature.

**General management:** Blockchain transforms how businesses are organized and managed. This is a fact easily understandable. Blockchain allows companies to eliminate transaction costs and use resources on the outside as easily as resources on the inside. Vertical integration may continue to make sense in some situations (for manufacturing controlled pharmaceuticals, for example, or where companies have industry-leading strengths throughout the supply chain). But in most cases, networks based on blockchain will be better suited for creating products and services and for delivering value to stakeholders.

**Sales marketing:** Just as a blockchain provides a way to obtain information about potential contractors and partners, it will be able to tell you about people or businesses who are potential customers.

**The Benefits of Blockchain Technology to Business Sector**

Blockchain is a peer-to-peer network with no centralized authority. The core idea of decentralized concept opens up a great number of benefits for business organizations (Logaras, 2018). At the core, it provides the
following benefits to them:

**Distributed:** Blockchain enables business organizations to benefit immensely from the decentralization. By using blockchain, business organizations can run their processes in distributed format. The needed computers (nodes) can be either owned by them or volunteer as there is no centralized database required in a distributed approach. Each peer has its own ledger, and this ensures that malicious actors cannot change the data.

**Public:** Business organizations are always keen to connect with their users. This means that they always have to have a particular process open to the end-user so that they can provide feedback or check information whenever needed. Blockchain supports business organizations do just that: create a federated blockchain network, as a mix of the public and private networks. The business organization will keep its critical processes and data in their private network while making proper use of the public features of the network. Thus, any user can check the information on the network anytime. This builds end-users trust and also makes business organizations accountable for their actions and deeds.

**Security:** Business organizations are always critical when it comes to the security of their trade secrets. They do not want their trade secrets to be a leak. Blockchain strengthens the security of their process and data. Blockchain uses high-level encryption to make sure that the data remain secure all the time. Many business organizations also implement a complete private encrypted blockchain network to make sure that their data never get accessed by a person who is not authorized to do so.

**Transaction cost:** Blockchain being independent on a centralized entity is cost-effective. The cost associated with processing a transaction is always lower compared to a centralized approach. Also, as the data are not stored in a centralized database, anyone within the business organization has the ability to access the data anywhere they want without the need to jump between conversations requesting the data. In some cases, the transaction cost can be completely removed—ensuring proper growth and efficiency.

**No intermediaries:** There is a clear benefit of intermediaries. Business organizations now don’t have to worry about third party solutions which act as intermediaries to provide service. This does off-load a lot of work from business organizations, but also bring the unnecessary risk associated with them. For instance, the whole work process can be halted because of the failure in the intermediate servers. If there is no backup, the business organization can lose a lot of value.

**The New Concept of Decentralized Autonomous Organization (DAO)**

In the light of the above, it becomes well understandable that blockchain impacts well enough the business organization’s design. The focus now changes from a stale hierarchical/centralized to a more decentralized approach. The design philosophy is based from now on to a Decentralized Autonomous Organization (DAO). By using DAO, business organizations become more autonomous and efficient changing also their structure (Wikipedia, 2020).

Decentralized Autonomous Organizations work independently with the combinations of analytics, connected devices, distributed ledger technology, and smart contracts. To do so, they set up properly designed autonomous software that comes with the immutable code. Each of the actors is placed correctly according to their role in the DAO. It should be noted here that the rules once set cannot be reversed. This is important to provide autonomy to the business organization. It also enables the different actors to trust each other and ensures that the consensus algorithm takes care of data validity and immutability.

In a DAO, power is established by the fact of how trusted an actor is. As there is no hierarchical approach,
the trust approach is needed. A node gains trust, depending on its actions and behavior. If it has pretty good trust, then it will act as a decision-maker in the network. By doing so, the power-share among the business organization is distributed equally.

The actors’ power is determined by its trust level, the number of tokens that it has, and its achieved merits. By giving three elements as part of the power calculations, each actor can shift the power balance.

Apart from the change in power, business organization design is also impacted. For instance, cryptography acts as a way to build trust. In traditional decentralized organizations, the decision making is done by seniority and expertise, whereas as in DAO, it is done automatically using smart contracts. The governance in DAO is also embedded in code. For traditional decentralized organizations, it is done by the board of directors.

**Conclusions**

It is quite clear that the revolution that is being induced in the operational conditions of the business organizations has quite a size and impact. Not only in the operational conditions, but also in the decision-making process. Not only in the operational conditions and the decision-making process, but also in the methodology and the security of the financial transactions. If we keep counting the affected sectors of the everyday operations of the business organizations, we will figure out that such a list is multitudinous. It becomes obvious that blockchain technology has the potential to significantly change a wide spectrum of business processes. As this technology is gaining traction and making its presence known in business processes, it will perhaps be role of process experts to ensure that the value created comes from exploring the opportunities this technology can enable in business processes rather than just replacing existing technologies with a new one. The overall feeling is that blockchain is changing everything in the business sector. It has great potential to introduce new and improved methodologies and ways towards a more secure, trusted, transparent and efficient business ecosystem.

**References**


