


Chapter 4

Marketing–Mix Metamorphosis and New Trusted Business Practices

Dário de Oliveira Rodrigues

 <https://orcid.org/0000-0002-2817-5115>

Escola Superior de Gestão e Tecnologia, Instituto Politécnico de Santarém, Portugal

ABSTRACT

This chapter discusses the impact on the marketing-mix due to the confluence of the internet of things and the internet of value which seems to be made possible by the blockchain technology. This “perfect storm” induces a vortex of reliability and business trust between people (“peer-to-peer”) and machines (“bot-to-bot”), without the traditional need of third parties to ensure confidence in a negotiation. This implies innovative business practices and self-executing contracts that will take place in a more decentralized and trustworthy environment, speeding up the metamorphosis of the four marketing-mix elements in such a way that marketers will have to deal with a “product” that is always in a “beta-version”; a dynamic “price” that initially has to be free; an atomized “promotion” of reliable messages found by costumers (not the opposite); and a new virtual secure “place,” which is made possible due to augmented reality and blockchain.

INTRODUCTION

It is thought that Blockchain Technology (BT) is a game changer that allows the emergence of an Internet of Value (IoV) by making the digital integration of two very different levels of confidence a reality. The first level is necessary to deal with information and to share its value, but it is not enough to deal with transactions which demand a second level of trust. The former lets users deal with information and its “value-of-use” (see Key Terms and Definitions) but the latter goes even further when it comes to business by allowing users to deal with money or its “value-of-exchange” (see Key Terms and Definitions).

DOI: 10.4018/978-1-7998-1843-4.ch004

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This Internet of Everything needs a Ledger of Everything. [...] Rather than the Internet of Information, it's the Internet of Value or of Money. It's also a platform for everyone to know what is true—at least with regard to structured recorded information. At its most basic, [the BT] is open source code: anyone can download it for free, run it, and use it to develop new tools for managing transactions online. As such, it holds the potential for unleashing countless new applications and capabilities. (Tapscott & Tapscott, 2016, p.5)

[Blockchain technology] offers a way for people who do not know or trust each other to create a record of who owns what that will compel the assent of everyone concerned. It is a way of making and preserving truths. [...] The great chain of being sure about things. (The Economist, 2015)

As it is known, digital reproduction entails very low costs and it is thought that if the problem of the lack of trust traditionally inherent to the virtual world can be overcome, entirely new trusted business practices will arise.

At the end of the day, bitcoin is programmable money. When you have programmable money, the possibilities are truly endless. We can take many of the basic concepts of the current system that depend on legal contracts, and we can convert these into algorithmic contracts, into mathematical transactions that can be enforced on the bitcoin network. As I've said, there is no third party, there is no counterparty. If I choose to send value from one part of the network to another, it is peer-to-peer with no one in between. (Antonopoulos, 2016, p.27)

Taking this into account it is thought that the BT can bring a new era of convenience and usability for consumers and “prosumers” (see Key Terms and Definitions), conveying trust between them to the point where they become “trusted prosumers”.

The IoT makes use of the synergies that are generated by the convergence of Consumer, Business and Industrial Internet customer. The convergence creates the open, global network connecting people, data, and things. (Varmesan, 2016, p. 16)

Many different features of the marketing function will be transformed by blockchain. Just as blockchain provides ways to obtain information about potential contractors and partners, it will be able to tell you about people or businesses you propose to do business with. (Tapscott, 2017)

The BT will speed up the digital change of the business paradigm, giving rise to a metamorphosis of the marketing-mix traditional elements (McCarthy, 1960) notoriously referenced for at least fifty years by Philip Kotler (Kotler, 1967), (Kotler, 2017). The metamorphosis of these four marketing-mix elements and the innovative strategies and business practices suggested in the face of such a transformation, are contemplated in this chapter.

MARKETING-MIX METAMORPHOSIS

The Fourth Industrial Revolution and the Internet of Things

Today's smart devices have innovative features that can deliver customized services and work regardless of the intelligence of the network where they operate and, according to Antonopoulos (2016), a network's lack of intelligence may even be an advantage.

Considering the previous industrial revolutions, the dominant idea at that time was that smart networks (e.g. phone network) were better not because of the intelligence of peripheral devices. In fact, the less intelligent they were, the easier it would be to evolve network intelligence, because products were developed in-house and the secrecy of their mass launching was seen as the key to the business success. But there is a particular disadvantage with such kind of smart networks, which is especially relevant when intelligence plumps across the market and such secrecy is no longer sustainable.

[Smart networks] have to be upgraded from the center out. And that means that innovation occurs at the center, [is ruled] by one player, and requires permission. As a result of smart network design, innovation only happens when a feature is needed by all of the subscribers of the network, when it is compelling enough to disrupt the function of the entire network to upgrade it. (Antonopoulos, 2016)

However, new smart devices are pushing the intelligence to the network's edges and the innovation capabilities are being moved to the prosumer's domains. It is considered that such a distributed intelligence recommends a profound change in the marketing-mix strategies, especially considering the Internet of Things (IoT), an exponentially growing infrastructure that interconnects people with unambiguously identified objects whose associated data can be powerfully processed.

[Customers are] increasingly surrounded by sensor-based applications and recommender systems using semantic web technologies to represent knowledge in specific domains and these technologies and the Internet of Things (IoT) are being combined in a Semantic Web of Things (Gyrard, 2014, p.1).

Overall, the inexorable shift from simple digitization (the Third Industrial Revolution) to innovation based on combinations of technologies (the Fourth Industrial Revolution) is forcing companies to re-examine the way they do business. (Schwab, 2017).

BT can have a tremendous impact in many business sectors; as stated by Friedlmayer et. al (2016, p.3), "[BT] can be utilized to bypass middlemen in the process of value creations and reduce frictions within systems. It therefore has the potential to be disruptive."

In general, blockchain and smart contracts can sustain market equilibria with a larger range of economic outcomes. (Cong et. al, 2017, p. 31)

ENTER THE NEW MARKETING-MIX

Product: Made by Bits, But a Bit at a Time

It is thought that a new digital reality paves the way to a different marketing approach where products and services should not be defined and marketed by companies, but instead developed and promoted by a collaborative work in the community.

Web 2.0 has made all interactions and conversations concerning “new media” potentially relevant for shaping marketing offers and sales promotions. (Cavallo, 2016, p. 145)

Therefore, it is thought that customers' contributions can be considered a precious marketing input given by a new kind of “self-service”, mostly intellectual, and this is why products will become experiments defined by the community. This is also why databases are probably the most precious assets for companies that want to thrive in this new digital world.

Three decades ago, Langeard and Eiglier (1987) coined the term “Servuction” to designate the process of producing a service. As it is well known, the presence of the customer is always indispensable for a service to take place, unlike the traditional production process that can normally be carried out in production units even in the absence of the customer.

[Servuction is] the systematic and coherent organization of all the physical and human elements included in the client-company interface necessary for the performance of a service, whose commercial characteristics and quality levels were predetermined. (Langeard and Eiglier, 1987).

Bearing in mind that the development of competitive products in the digital age must make use of precious market inputs, hereby is first hand suggested the term “self-servuction” (see Key-terms and Definitions) to designate a new type of intellectual self-service. It is thought that such a collaboration must be provided by the prosumers themselves during the process of “self-servuction” of products whose competitiveness is related to their level of innovation and customization.

While in the past the superiority of a product was always established from the outset, namely with advantages derived from branding, pricing, distribution or even through the establishment of legal barriers to entry (patents), currently the competitive advantages may arise from popularity and “crowdsourcing” leverage, mass customization and the sense of ownership or belonging induced in the final consumer.

It is considered important to emphasize the role of the BT when it comes to innovation and product development. As stated by Allen (2016), cited by Kane (2017), “blockchain creates new ways to create”.

[Blockchain] enhances not only the productivity of the system, but harnesses the talents of an open and inclusive community [...] enhancing collaboration and enabling distrust parties working efficiently together in a decentralized and innovative environment. Those powerful crowdsourcing and harnessing features make blockchain the main driver for the fourth industrial revolution. (Chuen, 2017)

In the second part of the chapter, some related strategies to create innovative products and new value propositions are presented.

Price: First of All It Has to Be Free or “Tokenized”

In the wake of previous industrial revolutions, the price of goods became largely dependent on production and distribution costs. However, in an increasingly lower transaction cost environment it is thought that the price of a product no longer has to be defined according to its production cost, but instead be formulated taking into account its perceived value.

Blockchain technology offers a credible and effective means not only of cutting out intermediaries, but also by radically lowering transaction costs, turning firms into networks, distributing economic power, and enabling both wealth creation and a more prosperous future. (Tapscott, 2016)

Recent technological advances can help companies to comply with new requisites of “price elasticity”; for instance, augmented reality is already taking the “price menu” to an all new level (Brooks, 2015). Thus, it seems that “fixed prices”, that once were a very convenient form of setting the price of mass production goods, will give way to an electronically adjusted price.

It turns out that, in the digital market, the marginal cost is equal to zero, and the prices of products made of bits or that incorporate bits as a significant part of its added value, which will be the norm with the growth of IoT, also tend to be so. This way, it is thought to be economically viable to make consumers adopt free products in the first place and once their preference has been won it becomes much easier to propose a premium value afterwards. This could be better than trying to charge early for a commercial offer just for it to be skipped over by many customers and lose a market penetration chance because of free digital copies that can easily arise.

Furthermore this normally happens quickly because the battles for gaining market and wallet share in the virtual world are much faster and more competitive than in the physical world (Chuen, 2007), as is the case of price discovery in a business environment decentralized by the BT. As stated by Ali and others (2017, p. 9), BT can support for sophisticated pricing functions.

For example, we created a: id names-pace in our implementation [of a pricing function] where (a) the price of a name drops with an increase in name length and (b) introducing non-alphabetic characters in names also drops the price. With this pricing function, the price of john.id > johnadam.id > john0001.id. The function is inspired by the observation that short names with alphabetic only are considered more desirable on namespaces like the one for Twitter usernames. (Ali et.al, 2017)

In view of the arguments set out above, the future mainstream of business can be based on the supply of free products to many customers in order to be preferred and win something afterwards by selling them related items (e.g. upgrades) with incremental benefits at incremental prices.

When considering incremental prices fitted to pay for incremental benefits of a “long tail” of customized products, it is thought that BT also constitutes a powerful tool to enable the corresponding micropayments since cryptocurrency streamlines such price strategy. Thanks to an unparalleled divisibility, the fractional use of tokens (see Key Terms and Definitions) as a means of payment can track any incremental price increase, which may be as small as the incremental benefits that justify it. The economic viability of such micropayments is also enhanced by disintermediation and the reduction of costs that BT makes possible.

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In order to show with some detail how to achieve profitability following a rationale that can somehow be counterintuitive, in the second part of this chapter price strategies and business practices will be presented.

Promotion: Trusted Inbound Marketing

The increasing availability of new media platforms relates to the empowerment of consumers and “digital technologies have accelerated the prosumer’s trend” (Rayna, 2015, p. 93), and it is believed that a new marketing communication paradigm arises marked by the multiplicity of processes to observe and respond to the consumer’s needs that are expressed online both directly (e.g. Google searches) and indirectly (e.g. Facebook posts).

With this in mind, the author proposed the expression “Manifold Marketing” (Rodrigues, 2012) to designate this new paradigm of marketing communication. This expression results from the author’s observation that only an atomized marketing communication, multiplied in time and space in both iterative and interactive ways, can satisfactorily respond to the modern marketing challenges.

[Manifold Marketing is] the process of creating and providing multiple contents, in multiple forms and formats, intended to be found by multiple customers that seek them in multiple platforms in many occasions during the several stages of their consumption process [which marketers call also “sales funnel”]. (Rodrigues, 2014)

As in this chapter the expression “Manifold Marketing” is used, it is appropriate to establish a conceptual difference between this expression and another concept, already well established, that is called “Integrated Marketing Communication (IMC)”. While the latter expression refers to the combination of the “communication mix” needed to provide clarity, consistency and maximize the impact of marketing communication, in the case of “Manifold Marketing” it is all about creating substantially different content for “buyer personas” (Mattinen, 2016), which are assumed by consumers at different stages of the “sales funnel” (Rose, 2008). Such content should be thought out, not in order to be consistent, but in order to be found by individuals who have different concerns throughout the “sales funnel” and, thus, will search for different keywords.

It is thought that the “atomic unit” of marketing communication in online media is no longer the website or even the web page, but the “post” published on any blog or social network. In fact, the “post” has become the basic unit of social web relations and can aggregate relevant information around itself (e.g. comments). After all, the marketing activity in social media consists of building relationships and dialogues between multiple audiences, and the messages are altered by exchanging perceptions and ideas among participants. As BT works by distributing trust on the Internet (Cachin, 2017) it can be instrumental in freeing individuals from the need to rely on claims made on the social media or even by institutions, about the quality of their own products.

BT has been called ‘the trust protocol’ because it facilitates trust between people without the need for an intermediary to verify and/or validate identities, funds, or ensure compliance (Hernandez, 2017). For instance, “it seems that provenance tracking along a supply chain could be one of the killer apps of blockchain” (Kim & Laskowski, 2016). On the other hand, in computer science “trust” is also a measure of the quality of a peer in “peer-to-peer” systems (Seppälä, 2016) and it is thought that by using applications based on BT individuals will consider “peer-to-peer” communication more reliable and

will use it systematically to make important decisions or even consider it as a general purpose technology to exchange assets and deal with sensitive information. Eventually, in a plausible future no trustful intermediaries or middlemen will be required due to BT.

Blockchain will be the driver of the fourth industrial revolution as it enhances not only the productivity of the system, but harnesses the talents of an open and inclusive community. There is no lack of capital nor a lack of good technology. But, no amount of capital or technology can do what blockchain does: enhancing collaboration and enabling distrust parties working efficiently together in a decentralized and innovative environment. (Chuen, 2017)

It is, therefore, important for marketers to make relevant content available, in order for it to be found by consumers and even more users in a networking effect meaningful to marketing endeavors.

Given the current multiplicity of interaction opportunities (in time and space) afforded by social media, the option to raise “micro-interactions” seems to be the best way to create proximity to consumers who are manifestly volatile and increasingly aware that now they can find what they want by their own means. To explore several ways of doing this, in the second part of the chapter a “Manifold-Marketing Matrix” will be presented.

Place: Crossing Virtual Reality and Real Virtuality

Considering the existence of a “mixed reality continuum” (Milgram & Kishino, 1994), Ilic and Fleisch (2016) stated that augmented reality (AR) extends the IoT experiences from the physical environment towards the virtual environment. These authors used the term “real” instead of physical, but it is considered that such an adjective is inappropriate because the virtual environment is of course, also real.

AR extends IoT experiences from the real [i.e. physical] environment towards the virtual environment. In addition to enabling novel user experiences of interacting with objects and the environment, AR also reveals new insights about the user. The same sensing technologies required for high-end AR displays can be used to measure the user. This gives new insights into the behavioral, cognitive, and emotional state of the user. With these insights, product-service interactions can be reshaped on a whole new level. (Ilic & Fleisch, 2016)

The virtual world should not be considered as separate from the physical world, but instead “tightly integrated into the world around us” (Guenther, 2012, p.365). Whether performed on-line or off-line, a shopping behavior is still real and the eventual developments in augmented reality promises to hit the business mainstream.

[AR] completely immerses a user in a virtual world or experience, typically through the use of a head-mounted display (HMD) that is often connected to headphones, controllers and other peripherals that let users navigate through that experience. A key characteristic of a great [AR] experience is the feeling of ‘presence’—users feel like they are truly in the synthetic environment being presented. (eMarketer, 2016)

The basis of [AR] is to display the real environment as faithfully as possible in an artificial virtual environment and work with this environment in real time. [AR] is actually a shift from simple (two-

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dimensional) human interaction with the machine, to a position where this interaction takes place in three-dimensional environments. (Kaleja, 2016)

AR provides an exciting new platform for consumer marketing, taking the consumer engagement based on location and interactivity to a new level (Barnes, 2016). Users want to be able to find information and accomplish tasks through multiple channels, and they want to be able to start a task in one channel, such as the physical stacks, and finish the task through another channel, such as a website on a mobile phone. These types of experiences are called “cross channel” experiences and one needs to think about how to integrate all of the different channels in order to move between them easily and seamlessly (NASIG, 2012). For instance, it is thought that the combination of BT with new applications for the retail sector, which are based on digital devices called “beacons”, can revolutionize the shopping experience.

Blockchain and beacon technology are merged together. The result is a smooth and secure shopping experience which fuses the advantages of online and offline worlds in retail. (Frey et. al, 2017)

On the other hand, the predictable growth of the IoT is believed to further increase the ethical dilemma created by the need to establish a compromise between the convenience of each client and their need for privacy (Rodrigues, 2011). However, BT eventually will allow, for the first time in history, to solve the dilemma that exists when considering the trade-off between convenience and privacy, greatly reducing the perceived risk on the part of consumers. For instance, with a combination of BT and smart devices as the referred “beacons”, “the resulting outcome is a recommendation system, a self-checkout system, and a payment system all in one, thereby full anonymity is guaranteed and the customer never loses control on her data” (Frey, 2017, p.1). In the second part of the chapter (section 2.2.4.), this system will be detailed.

NEW TRUSTED BUSINESS PRACTICES

The Blockchain Technology and the Internet of Value

An idea visualized by Jarvis (2010), cited in (Rodrigues, 2012, p. 315), may be useful for understanding the phenomenon of value creation in business networks, not only during the third industrial revolution, as this author seems to believe, but also in today’s shifting paradigm *due to BT* which is itself considered a fourth industrial revolution (Chuen, 2017). *According* to Jarvis, it is a matter of imagining the economic agents as inserted in “a cloud of connections that lights up every time a new connection is created so that the cloud grows bigger and becomes denser, more luminous, more valuable”. It turns out that this value can be subdivided into “value-of-use” and “value-of-exchange”, two important concepts covered in this chapter (see also Key terms and Definitions).

The “value-of-use” created by digital networks has increased considerably and has been distributed by its users. However the “value-of-exchange”, which is not so well spread as the former, is being distributed asymmetrically in favor of companies such as GOOGLE and FACEBOOK that are appropriating all of it. This asymmetry can be dramatically unjust when it is known that the corresponding market value is essentially formed by assets derived from data provided by their own users.

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Instead of being quantified by using “likes”, as happens with the value-of-use, the correspondent value-of-exchange is quantified by using money (e.g. euros). Interesting enough, due to BT, some companies (e.g. Steemit) can not only distribute the former but also the latter kind of value to their users (in the form of tokens and cryptocurrencies) and still profit from the process.

Steemit is a publishing and a social networking platform [based on its own blockchain], whose principle is to favor and remunerate the contributions of its users using a virtual currency. These contributions can take many forms, that range from publishing original content (blog posts, videos, images, etc.) to the active curation of the platform through the appreciation of content submitted by other users. (De Fillipi, 2016, p.9)

BT uses the combination of peer-to-peer networks, cryptographic algorithms, distributed data storage and decentralized consensus mechanisms (Wright & De Fillippi, 2015), to enable new decentralized forms of allowing individuals (and even objects) to make trusted contracts between each other or collaborate with one another with no need for a middleman nor any kind of central coordination.

[BT] is a remarkably transparent and decentralized way of recording lists of transactions [...] particularly well suited to situations where it is necessary to know ownership histories. [...] Blockchains shift some control over daily interactions with technology away from central elites, redistributing it among the users. (Boucher, 2017, p. 5)

The basic economics of blockchain can be thought of the case for why decentralized solutions to ledgers, now technically possible, are likely to become increasingly cost effective compared to centralized solutions as they run down three exponential cost curves: (1) Moore’s law (cost of processing digital information, i.e. speed, halves every 18 months); (2) Kryder’s Law (cost of storing digital information, i.e. memory, halves every 12 months); and (3) Nielsen’s Law (cost of shipping digital information, i.e. bandwidth, halves every 24 months). (Davidson et. al, 2016)

As it is stated by Wright & De Fillippi (2015), cited by Pazaitis (2017, p.14), “[BT] serves as a means to record, in a secure and verifiable manner, a particular state of affairs which has been agreed upon by the network”. This “general purpose technology” (Davidson et al, 2016, p.2) is the first native digital medium for value (Tapscott & Tapscott, 2016), allowing “mutualised productive resources that are central to the capacity for any kind of production, including physical goods” (Pazaitis, 2017, p.11). For the first time, by allowing peers to operate through “smart-contracts” (see Key Terms and Definitions), BT can change social perceptions and even the current value system. It is early to know if a radical transformation of today’s economic society is coming, but BT is already considered prominent in shaping the business environment in the near future.

Property, contracts, and identity management are only a few examples of how a peer-to-peer, open, and frictionless [BT system could change how we conduct business in the future. (Wan, 2014, p. 2)

What we should expect is for Blockchain to eventually exhibit the key characteristics of a General Purpose Technology to such a great degree that it will seem obvious that it is a major innovation capable of bringing long term growth and change. (Kane, 2017)

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As stated by Pilkington (2016), cited by Kane (2017), we are still in the early stages of BT acceptance as a disruptive new technology. However, looking into the speed of adoption of such paradigms as the mainframe computer, the PC, and the Internet, whose influence was spread by mobile and social networking, it is true that “due to the current widespread global Internet and cellular connectivity, [BT] could be deployed much more quickly than any of previous paradigms” (Crosby et al., 2016, 8).

BT is showing the ability to spread into areas that involve even more complex issues such as justice and governance, which is believed to be a fertile area for academic research in the coming years. It is thought that if the principles of openness, collaboration, and sharing are politically framed and legitimized, more interest and investigation in BT should be expected.

There is an emergence of a hybrid economy composed, on the one hand, of the capitalist market and, on the other hand, of the economy [based on] community sharing of common collaborative goods. (Rifkin, 2014, p. 11)

The main political binary of the last half of the twentieth century was communism versus capitalism. In the 21st century, this binary is open versus closed. (Ross, 2016, p. 233)

It is important to understand how the new standards of openness, that can be fully trusted due to BT, contribute to the notion of “shared ideas” and should be taken into account for marketing success.

Traditionally, the predominance of secret or closed programming standards made impossible for third parties to program interfaces between programs and applications created by different organizations. These entities and respective applications remained stagnant because secrecy was considered to be “the heart and soul” of any business. Apparently, this is no longer true and the generalization of open code software and opened APIs (Application Programming Interfaces) clearly specify the details of the interaction between independent programs belonging to independent companies or programmers. (Rodrigues, 2011, p. 320)

It is believed that co-opting third parties contributing to this value-creation process may not be as difficult to achieve as one might think, and as it will be seen, it is considered very important indeed to be able to integrate their contributions into the development process of innovative products.

The most important motivators for users’ participation are knowledge acquisition and intrinsic motivations. Socialization with other users sharing common interests, also emerged has a relevant determinant while being rewarded for their participation was not among the most important [motivators]. [Although] participants collaborate mostly in a free and voluntary way, our research concludes that engagement in creating with peers may not purely be a function of altruism, but also of benefits that participants, reasonably, expect to attain, and perceived CCv [Co-Creation Value] within the engagement process. (Fernandes, 2015, p.11)

In keeping with Fernandes (2015), one can take an interesting conclusion: it seems that this kind of collaboration through users’ participation can be more motivating when it occurs more frequently and extensively.

All these changes seem to pave the way for an entirely new set of marketing-mix strategies and innovative business practices as will be observed in the next pages.

THE NEW MARKETING-MIX GUIDELINES

The New “Product”: “Self-Servuction” Architecture

When it comes to the products considered in this chapter, we refer to a whole “long tail” (Anderson, 2006) of products whose digital component is increasingly responsible for their functionality, stressing that, in the so-called “Internet-of-Things (IoT), “bits” are the components that will give greater value to products, much more than the atoms that physically make them up.

As it was seen in the first part of this chapter, the “prosumers” should add value to products through a new kind of self-service that was then designated “self-servuction” (e.g. user-generated content on social media) which it is thought that can intellectually add much more value to products when compared to the added value of its manual counterpart of the previous industrial eras.

Products become experiments and we shouldn't design an experiment with only that experiment in mind; it is necessarily linked to many other experiments that we must take into account with our design. [...] Experiments become cross channel experiences – Cross channel experiences will be ubiquitous [and] users are becoming more and more involved with content creation. (Bacon, 2012, p.1).

The architecture of a “self-servuction” process should allow a continuous and gradual increase of the global value of products and services, added in each time they are used by each client. Therefore, it must be an interactive and iterative process, unfolding in a spiral of knowledge in which the company learns from the client's interactions (business inputs), which should be integrated in future product features. This is the case of “Google Translator” platform among other products or services that use similar algorithms.

Our framework makes it possible for human collaborators not only to detect and correct some errors, but also to identify detectable errors that aren't correctable given the current information. We designed an interface to support this collaborative monolingual translation protocol. (Hu et. al, 2010, p. 8)

On the other hand, technological progress in the realm of virtual reality (VR) and 3D printing can further increase the autonomy and involvement of the prosumers in the aforementioned “self-servuction”, making participation experiences more immersive and appealing, having a positive impact on their viral marketing potential.

Within research and development, 3D modeling is already commonplace in the consumer segment [...] VR also enables customers and representatives to design their own customized products. For example, the Lowe in-store Holeroom application allows consumers to design a kitchen or bathroom, explore it in VR, and share it on YouTube. (Morris 2016)

Experiential marketing content can be convincing, immersive, and also potentially social and participatory, creating a potential for virality. (Barnes, 2016)

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Finally, as stated by Pazaitis et. al (2017), BT is enabling a new system of value that will better support the dynamics of social sharing. For instance, in the matter of privacy, a potential customer can allow a company to apply a recommendation algorithm without disclosing his or her personal data (Frey, 2016) and it is believed that this BT feature can increase the consumers' appetite to share and collaborate.

The New "Price": "Freemium" and Micropayments

It is known that a "free" offer can increase the value of other complementary offerings which can be charged if the former creates a perception of their scarcity. Hence, it is thought that, when dealing with digital products, the marketer should manage the commercial offerings by thinking first about what abundance is more interesting to create in order to get some type of profit from the scarcity that follows.

According to this rationale, certain price models are exhibited in table 1, which are useful to address the challenges settled by the BT.

Table 1. Free-based price models

Types	Price Models	Examples
Free 1	Direct Cross-Subsidy: get one thing free, pay for another.	The smartphone is free, but only when accompanied by a chargeable signed-in plan...
Free 2	Ad Supported: the free product or free service is supported by ads (a third party subsidizes the second party).	The daily newspaper is free but contains ads... (the journal does not sell newspapers to readers, it sells the readers to advertisers)
Free 3	Freemium: when the company offers many products and sells premium versions (the traditional ratio of samples is reversed)	The Skype calls on terrestrial lines are free, but the Skype mobile call service is paid... (a few people subsidize everyone else)
Free 4	Gift-Economy: people give away things for non-monetary rewards (to fulfill belonging, self-esteem, or self-realization needs).	Wikipedia (if someone offers their work voluntarily to many, later on, many will be grateful and some of them will donate).

Source: adapted from Anderson (2009)

Specifically regarding the model of type 3, there are several possibilities that can even be combined: (i) to offer free use of the product for some time but after that exhausted time start cashing in; (ii) to offer a limited number of free features but demand payment to activate extra features; (iii) to offer a certain number of units of products for free but charge for selling extra units; (iv) to offer a free product to clients who meet certain requirements or have a certain profile but request payment from other customers.

It is thought that the impact of BT in the operationalization of these price models will be particularly interesting, especially when applied to type 3 and type 4 price models. Concerning the latter, which is the price strategy followed by Wikipedia, it is believed that, like it was seen in relation to the aforementioned redistributive behavior of the company Steemit, it will also be possible to distribute tokens to any users who want to give their attention, reputation and knowledge in what used to be a non-paid voluntary work. It should be noticed that these tokens can be given or exchanged between users, obviously being offered first by those who purchased them following an Initial Coin Offering (ICO), generally doing this with the hope that these tokens will increase in value in the future, thanks to the popularity of their use (depending on the models used by the issuing companies, these tokens may or not be subject to the inflation resulting from eventual new issuings).

If BT really changes the business game, future prosumers can prefer to collaborate with those companies that choose to share their wealth with whom ultimately originated it. As for the type 3 model, it is thought that BT and cryptocurrencies will also allow faster payments for using premium features and even to make micropayments to buy single features, because the cryptocurrencies “are better for microtransactions and micropayments with very fast resolution” (Antonopoulos, 2016, p.135). Therefore, it is thought that BT will facilitate the adoption of an “as-a-service” approach (e.g. pay-as-you-go) and perhaps people will start to prefer “using” instead of “owning”.

“Services that let customers access goods, such as car-sharing, are increasing relevance as an alternative to ownership. These access-based services allow consumers to avoid the “burdens of ownership”, i.e., risks and responsibilities that come with owning a good [...] a higher usage of an access-based service increases the likelihood that consumers subsequently reduce ownership.” (Schaefers, 2016, p. 569)

In fact, it is thought that there might be a tendency of substitution, on the part of the prosumers, of the feeling of individual property for an ecological feeling of shared use, is an important subject that deserves to be investigated from the marketing point of view and beyond.

The New “Promotion”: “Manifold-Marketing”

In the first part of this chapter it was stated that marketing communication works better with a “Manifold-Marketing” approach. Although without intending to generalize or extend to other sectors the results obtained in a pharmaceutical marketing study conducted by the author (Rodrigues, 2012), it is thought that one can take it as an example on how to identify different segments of customers as well as their preferred communication channels and the best marketing conducts to be undertaken online. Therefore, the following “Manifold-Marketing Matrix” is presented:

Table 2. The Manifold-Marketing Matrix

	The Curious	The Criterious	The Communitarians
Consumers	<i>Circa 50% of users</i>	<i>Circa < 20% of users</i>	<i>Circa > 30% of users</i>
Channels	Prefer Web Content	Prefer Websites	Prefer Social Media
Conducts	Social Bookmarking	Search Engine Marketing	Social Media Marketing

Source: adapted from Rodrigues et. al, (2013)

Observing table 2 it is possible to distinguish three market segments:

- “The Curious” are the users that consider search engines a preferred tool to search for information because they think first about content and related keywords in order to search and be able to find what they want. This is the segment with the largest number of potential consumers and the marketing effort should be based on content marketing and content aggregation through social bookmarking (see Key Terms and Definitions) making content fully searchable and ready to be found by users.

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- “The Criterious” are the users that give high importance to the public and private institutional websites. The most suitable procedure in this case is to increase the likelihood of an institutional website to be found online, raising their conspicuity on the web through search engine marketing aiming to capture the customer’s attention and help them to find their way to products and services.
- “The Communitarians” are the users that value interacting and sharing content on the Internet. Therefore the marketing effort must embrace the participation in the social networks, emphasizing the creation of “posts” and their comments, not forgetting about other network functionalities which are available in the social media ecosystem, including interactions via chats, video and photo sharing, micro-blogging, etc..

Therefore, the marketers’ focus on Search Engine Marketing isn’t a marketing panacea or even a business procedure as relevant as one can think, which discourages what seems to be a common practice for the majority of marketers, which is comprehensible because for both companies and customers this is considered one of the most important keys for business success.

The majority of marketing spend is derived from online marketing where Search Engine Marketing is the largest spend category [...] The majority of marketing spend today is on Search Engine Marketing. (Deloitte, 2015)

Further studies are therefore needed in order to understand whether it is possible to extrapolate the results expressed in the presented “Manifold-Marketing Matrix” and verify their applicability to other business sectors.

The New “Place”: Omni-Channels of Augmented Reality

Regarding the “Place” element of the marketing-mix, its metamorphosis is underway and the modern distribution should ensure that an organization can keep delivering on its promises in the presence of “omni-channel” customers that are and will be emancipated as never before. For this purpose, specific “Place” strategies must be set in place.

[The omni-channel customers] think of shopping as one experience, whether online (including on a mobile device) or in-store and so must businesses. [...] Consumers now expect the same experience across multiple shopping channels, including the same products being available both online and in-store. (Worldpay, 2015)

The double entry matrix presented in Table 3 shows the possible buying situations when shopping either on-line or off-line.

To facilitate the management of the “Place” element when it involves an “omni-channel” perspective, specific customer relationship management (CRM) strategies can be established to facilitate the seamless marketing integration of various distribution channels. However, such systems are complex and their articulation can be difficult to implement and maintain. This is why it is thought that BT can empower many applications to coordinate such integration, notably by facilitating the articulation of multiple decentralized databases from the retailer’s perspective, enabling reporting to a trusted public ledger and the use of “smart contracts” to reduce friction from the customer’s perspective.

Table 3. The multi-channel shopping experiences

	<i>Buy In-Store</i>	<i>Buy On-line</i>
<i>View In-Store</i>	Traditional Shopping (Bricks-and-Mortars)	“Showrooming” and “Self-Checkout”
<i>View On-line</i>	In-store inventory is visible through e-Commerce.	Digital Shopping (Pure Players)

Source: adapted from Worldpay (2015) and Frey (2017)

Several marketing studies proved that personalized offers are more successful than non-personalized ones and increase the customer satisfaction (Smutkupt et. al, 2010). Thanks to the use of BT, the privacy of customers becomes cryptographically guaranteed which is of great interest to facilitate the use of “smart-contracts” and the creation of a new purchasing system where the customer can invoke and customize such contracts stipulating which data can be used and by whom.

“An apparel company gets access for computing recommendations for clothes based on the customer’s body measurements. The company has never access to the measurements and the customer is even able to completely block other sensitive data like detailed textures resulted from a 3D body scan. All involved data are permanently encrypted. There is no need for a trusted-third party.”. (Frey et. al, 2012, p. 2)

On the other hand, as stated by Çadırcı & Köse, (2016, p. 281), augmented reality “is a valuable tool that can be used to enhance the online shopping experience in a way that wasn’t possible before”. The following situation is an example of this:

“She then uses an augmented reality feature in the application to see how it looks at her, and sends it to her friends for feedback. Her friends give a positive review and she places the order online, to have it delivered to her home in the next few hours” (Mishra, 2014, p. 10)

Looking into an innovation in retail, recently made possible by the combination of BT and the “beacon” technology, which is based on low energy devices that broadcast a Bluetooth signal to nearby mobile devices equipped with an application that pushes marketing notifications and displays them on the user’s screen (Andriulo, 2015), it seems to be clear that this evolution allows a seamless shopping experience as is detailed in the following example:

When she approaches the store, the Beacon sends a signal to her smartphone and triggers two actions. First, the app computes a new blockchain address for the upcoming transactions. Second, an encrypted message, including the personal data and its permissions is automatically sent into the blockchain network to the company’s address. [Then] the company gets a notification and starts the recommendation algorithm. [...] When the company receives the results, the recommendations are forward to the user’s address. Finally, the app decrypts/visualize the recommendations. [After that] the customer may decide to buy one of the recommended products. She selects the product on her smartphone and put it into a virtual shopping basket. Then she directly pays with a transaction into the blockchain network to the address of the company. After completion, she may terminate all data access and computation permis-

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sions. During the whole process, the full anonymity for the customer is guaranteed and the company never received customer's personal data. (Frey et. al, 2017, p. 2)

It is known that the processing costs of payments can be up to 5 percent per transaction, decreasing the already short margins of e-commerce players (Deliotte, 2015). When incurred by other players of the physical world these costs can be even higher and, interestingly enough, BT can reduce them considerably (Antonopoulos, 2016). It is believed that this will lead to a technological substitution and new business practices. This evolution was announced a few years ago, having been detailed how BT simplifies payment systems (Nakamoto, 2008).

Finally, the aforementioned use of augmented is already in place thanks to companies such as Nestle, Unilever and Cadbury, and has enabled better shelf layout and increased sales (Rutgers Online, 2014). On the other hand, the socially-connected nature of mobile devices (and other computing devices) means that instead of providing augmented reality in stores, companies are increasingly likely to change their distribution strategy and distribute downloadable apps for consumers (Barnes, 2016).

Due to BT's decentralized structure and to the discretionary privacy that can be guaranteed to those who use it, the public availability of information about the supply chain provenance of goods is now a reality and such monitorization gives to all stakeholders the ubiquitous opportunity to track products from the place of origin to the end consumer (Dickson, 2016). Blockchain startups like provenance.org and skuchain.com are working on the supply chain provenance (Kim, 2016). These are examples on how the cryptography-based and immutable nature of the ledgers based on BT will bring security and trust to the business practices related to this marketing-mix element.

CONCLUSION

Digital reproduction entails very low costs and means business opportunities, in particular through the use of innovative forms of collaboration based on openness and decentralization which is the case of blockchain technology (BT). The basic economics of blockchain are a good example of a network effect, revealing the greater efficiency of decentralized solutions when compared to centralized ones. Because relying on algorithms of mathematical trust seems to be much cheaper than relying on trusted third parties, BT is becoming increasingly competitive against the mature technology of centralized ledgers and this is driving a technological substitution. On the other hand, the current competitive environment calls for creativity and for a cross-fertilization of projects and ideas which are coming from different minds and different owners. This is making the legal framing of intellectual property obsolete and leading to the emergence of less restrictive approaches. It is thought that these and other fundamental changes, determine the following metamorphosis of the marketing elements.

Starting with the "Product", it is known that a growing part of the value proposition of innovative products is related to their customization which is tendentially based and formed by bits instead of atoms. These bits are coming from databases whose value is correlated with their capability of collecting information that leads to product innovation and customization - it is for this very reason that user data is so coveted and valued in the market, even giving rise to cases as scandalous as those involving the companies Facebook and Cambridge Analytics (Cadwalladr & Graham-Harrison, 2018). Accordingly, the "Product" will be constantly changing (bit by bit, but a bit at a time) and will look like a permanent and pervasive "beta" experiment carried out jointly with the users. In order to do this, for co-opting third

parties to work as an external resource is increasingly important and such contribution corresponds to a new “self-service” paradigm in the information age. To designate it, the “self-servuction” neologism was first hand created. It is considered that product management will become, to a large extent, a matter of encouraging users to co-create value and that such contributions can be increasingly relied upon BT, enhancing the safety and productivity of a decentralized and collaborative work (e.g. peer-to-peer).

As for the “Price”, it is thought that it is also in a deep metamorphosis mainly due to a deflationary digital environment by virtue of the extremely low costs associated with the digital reproduction. It is increasingly easy to obtain information about prices and to know the global availability of products and services, which makes it increasingly difficult to create value based on the traditional way of doing business. New price models can use digital features to increase the popularity of products and services rather than managing the product’s scarcity and it is possible to turn this digital abundance into a passport for profitability, often in ways that can be counterintuitive. Moreover, the BT allows the creation of “[cryptocurrencies] that are better for microtransactions and micropayments with very fast resolution” (Antonopoulos, 2016, p.135), contributing to the growing of a “long tail” of products. As the BT allows businesses to release their own tokens, for instance through an Initial Coin Offering (ICO), these can later be exchanged for products, services or money. For this reason the price strategies should allow such advanced payments.

Regarding the marketing-mix element “Promotion”, the author uses the expression “Manifold-Marketing” to designate a new marketing communication paradigm that starts from the premise that multiple messages must be searched and found by customers rather than being thrown against them. Taking into account that a new paradigm of trust (BT) seems to be coming to the Internet and even reliability could become searchable, a new set of multiple trusted messages will be marketable. Trying to elucidate how to deal with the element “Promotion”, a “Manifold Marketing Matrix” was introduced and different types of preferred digital marketing tools and communication channels were presented.

Finally, considering the “Place”, it seems to be clear that only an ubiquitous distribution can satisfy omni-channel customers that want to find information and be able to buy through “cross-channel” experiences. As it was seen, this can influence the technological progress and new applications will be created on top of BT. It is thought that trusted transactions are on their way and a more decentralized distribution of value is perhaps, not so far away.

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KEY TERMS AND DEFINITIONS

Manifold Marketing: The process of creating and providing multiple contents, in multiple forms and formats, intended to be found by multiple customers that seek them in multiple platforms in many occasions during the several stages of their consumption process.

Prosumer: A proactive consumer that voluntarily and when stimulated to do so, participates in the design, creation or improvement of products and services.

Self-Servuction: The process of production of a service carried out in a strategic partnership and close collaboration with the prosumers.

Smart Contracts: Software programs that code business arrangements and that execute themselves automatically under pre-determined circumstances which are also coded.

Social Bookmarking: Web services that perform the indexation and the tagging of content in a socially intelligible way, allowing to organize that content in order to facilitate access and sharing.

Token: An object (either in hardware or software) which represents the right to perform some operation. Currencies are “tokens” of the physical world and cryptocurrencies are tokens of the virtual world.

Value of Exchange: The value that can be obtained by trading something.

Value of Use: The value that can be obtained when using something.