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The Future of Kenyan Banks: Mitigate Financial Risk Using Cryptocurrencies and Blockchain Technology

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ABSTRACT: The banking sector has undergone tremendous changes in the past decades. This paper seeks to investigate the future of Kenya banks by using cryptocurrency and blockchain technology to mitigate financial risk. A cryptocurrency performs the fundamental function of money, as a medium of exchange. The encryption and decentralization of digital currencies are the most important aspects regarding the applicability of Cryptocurrencies and Blockchain Technology in Kenya. Digital money supports individual investors as opposed to a dominant market player or authority. The fact that no single authority controls cryptocurrencies is the heart of its applicability in Kenya. Digital money is a unifying factor for the world markets defined by growing inequality and financial malpractices. The Kenyan banking system may take advantage of the smart contracts to address the myriad risks owed to the economic actions of the private and public parties. Banks can use the digital money to eliminate intermediaries that often constrain the capacity of the individual traders to enter into contracts. Cryptocurrencies operate on a user-to-user basis to enhance flexibility and control by the individual traders. The use of the technology can help the state to reduce the risk of loss owed to inaccurate authentication and valuation of assets.

KEYWORDS: cryptocurrencies, blockchain technology, financial institutions, market risks, Kenia, banking system

1.0 Introduction

Technological innovation defines the important revolutions in the world of business over the years. All the significant changes reveal a remarkable keenness on security and efficiency (Chilukuri & Madhav 2015). Individuals and corporates are keen on optimizing their utility by saving time and accruing maximum rewards on their investments. However, the desire to consistently thrive in a given industry surpasses all the competing interest for business people Cryptocurrencies and Blockchain Technology has over the years evolved to become the embodiment of security and transparency. The idea behind the system is to have a digital currency that can be influenced by everyone. It can be created by anyone and is decentralized such that the state or a private body cannot regulate it (Dulea 2015). Being a highly secure monetary control system makes Cryptocurrencies and Blockchain Technology a valid answer to the financial risks particularly prominent with the developing states. The principal inclination for all market players shifts to a stable framework for conducting transactions and quantifying value for myriad goods and serves.

1.1 Blockchain Technology

While cryptocurrencies compare uniquely with the predominant forms of money, its infrastructure is a subject of complexity. The most significant contrast regards the lack of regulation, an important quality of digital cash (Pilkington 2016). We do not have the central banks with regards to cryptocurrencies. The technology is entirely virtual and thus lacks a central repository. A case where money can be lost by being stolen from the bank resembles a computer crash, in the case of cryptocurrencies. On the other hand, as the central banks work on various security mechanisms, the control of digital money requires technological management know-how coupled with backup copies of holdings. Blockchains are the ideal back up and also serve as central repositories (Antonopoulos 2014). A blockchain may also be defined as a list of records integrated using cryptography.

However, it is essential to note that blockchain differs from the ideal of the central bank, for the case of physical money. On the contrary, no one has control of the blockchain nor is there any modification of data (Wright & De Filippi 2015). The technology has evolved over the years to be identified as an openly distributed ledger. It seamlessly integrates all transaction between multiple parties at an instant. Verification also happens as soon as the transfer of money takes place between one individual and the other. Nevertheless, the fact that digital funds rest on the use of technology calls for the integration of financial networks. Blockchains facilitate the need with the provision of a protocol that allows the inter-node exchange of information. The figure below shows the various nodes represented in circles, and interconnected within a single network.

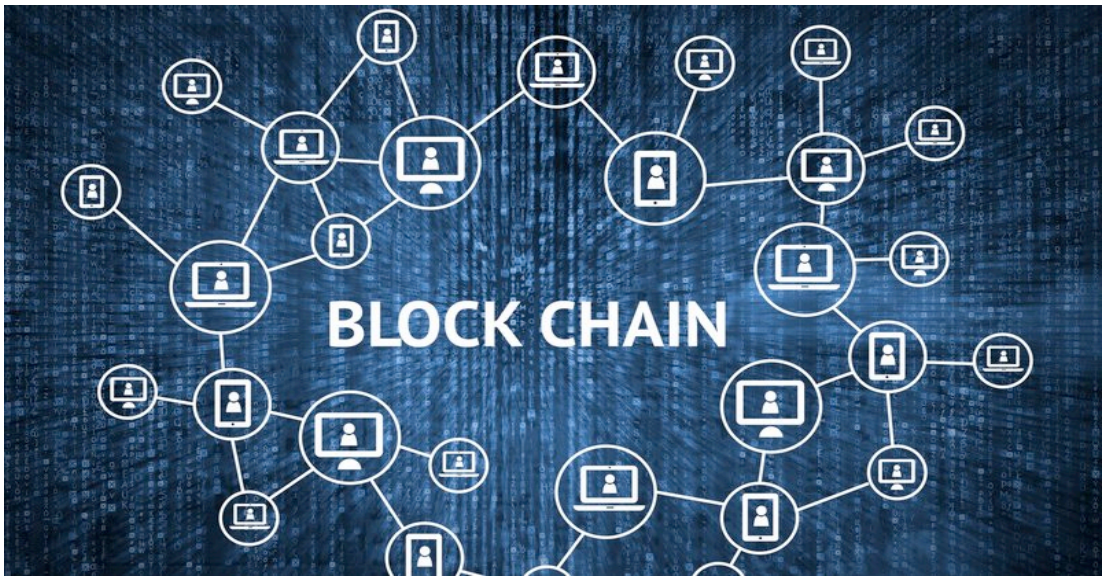

Figure 1: Blochchain Technology (Blockchaincompany 2018)

No data can be altered upon being recorded in the network (Fanning & Centers 2016). A practical implication with the use of physical money is that the receipt should not be altered or lost following the exchange of money for a given commodity.

1.2 Cryptocurrencies

A cryptocurrency performs the fundamental function of money, as a medium of exchange. However, it elicits vital contrasts especially due to the lack of tangibility. On the contrary, it is a digital asset with a sophisticated technological design to act as a

medium of exchange (Peters, Panayi & Chapelle 2015). Firm cryptography is key to the security of the medium of exchange. It explains the rationale for universal applicability, where no state or economy can claim to have full control of the asset. Cryptography is also responsible for other principal dimensions of cryptocurrency as a median of exchange. Most profoundly, it can establish the most desirable volume and velocity in the market (Scott 2016). Just like the physical money, cryptography ensures that the creation of extra units or denominations does not disrupt the economy and the individual markets. Secondly, the fact that one can easily track the movement of the digital currency caters for record keeping (Crosby et al. 2016). In fact, the technology is an improvement regarding the essence of tracking and recording transactions. It has been engineered to be in tandem with the transfer of assets. The Bitcoin is one of the main types of cryptocurrencies as shown in the figure below. Other types include Ethereum, XRP, Stellar and Tether.

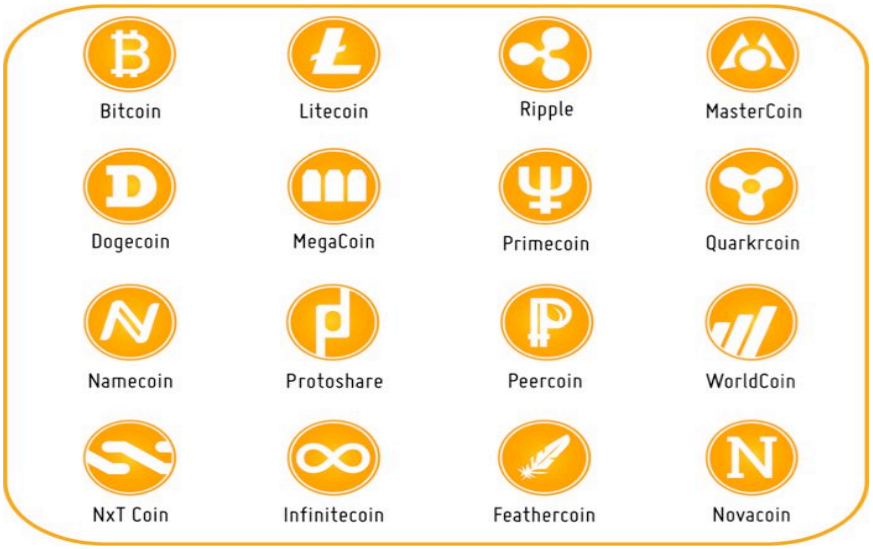

Figure 2: Types of cryptocurrencies (Bigstock 2004)

The distributor ledger technology is the foundation of the decentralized attribute of cryptocurrency. A look at the definition and blockchain frameworks will facilitate a more meaningful approach to the integration of the public and the financial market. However, the cryptocurrencies revolve around a predefined financial transaction database. While the idea of digital money came into existence in the early 1980s, the most notable applications were conceptualized in 2009 with the launch of the Bitcoin (Mainelli & Smith 2015). The digital currency is but one of the many other cryptocurrencies, the same way we have multiple currencies around the world. One cannot define the economic revolution without an articulation of the ease of transfer of funds. The digital framework suggests that individuals have tremendous control of their money, and can move it at a go. The system hosts multilevel public and private keys to facilitate security in the flow of money. Besides, the public enjoys greater access to financial data regarding their financial transactions.

2.0 Rationale for Cryptocurrencies and Blockchain Technology in the Develpoping Countries

The encryption and decentralization of digital currencies may be the most important aspects regarding its applicability in Kenya and any typical developing state. Traditional money revolves around multiple intermediaries beyond the central and underlying fiscal policies. Fluctuation is the only contest regarding the unlimited flexibility of the cryptocurrencies (Pilkington 2016). It is difficult to control significant adversities regarding the value and velocity of digital money. It entirely relies on the current actions of the users through transactions or saving. However, free economics has often been a consideration for multiple economic theorists and individual market players. Just like the traditional money, cryptocurrencies can also align with the fundamental elements of demand and supply (Antonopoulos 2014). Its value and availability can be adjusted by natural economic parameters, without any involvement of a central body. The figure below demonstrates how the decentralization of digital currencies enhances the capacity of the public, and reduces the control of the banks. The cryptocurrency acts as the money exchanger while the banks only allow movement of the currency.

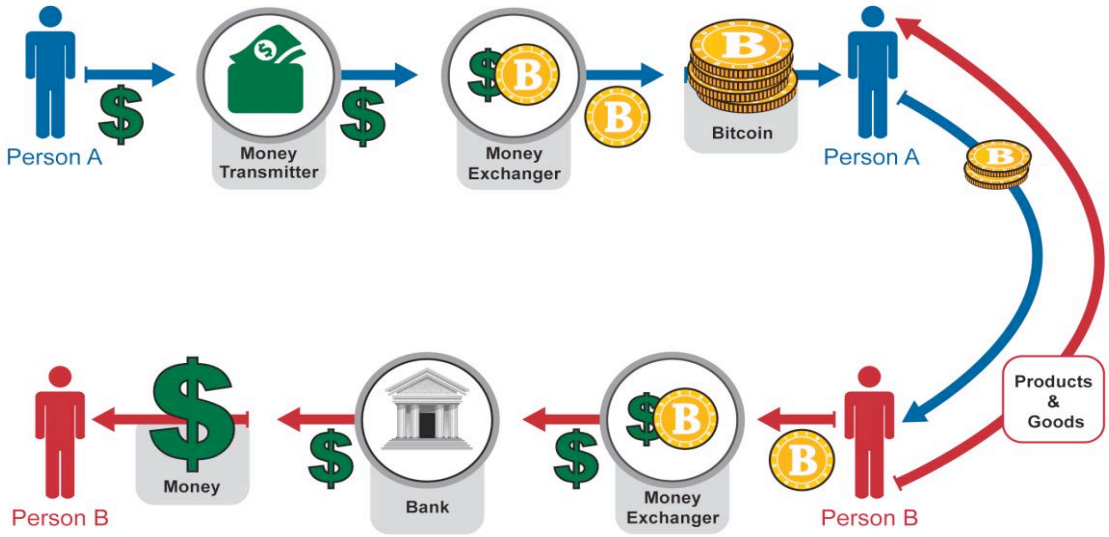

Figure 1: Decentralization of digital currencies (source:http://www.howtogeek.com/wp-content/uploads/2015/12/650*347*de)

Cryptocurrencies and blockchain technology support individual investors as opposed to a dominant market player or authority. It is therefore ideal for the developing states often in a crisis trying to eliminate the middlemen (Fligstein & Calder 2015). Regulators often fail to meet the standards of a highly dynamic market. A necessary implication regards the inequality crisis in Kenya and most developing states. The gaps in the level of income continue to widen as the wealthy continue to amerce more wealth, with the poor struggling to meet basic needs. Most of the financial market policies favor the rich as they define demand and supply for various services (Faúndez, 2016). Major industries are responsible for the fixation of interest rates and the pricing of primary commodities. They may also play a hand in the establishment of significant fiscal policies. However, the infrastructural identity of cryptocurrencies is such that everyone can participate in the valuation of vital financial parameters (Mougayar 2016).

For instance, given that anyone can participate in the mining process, it is easy to build the capacity of the low income earners to participate in major economic activities.

The consequent adoption of cryptocurrencies is also a huge possibility in the developing world. The economic revolution closely resembles the evolution of the internet over the past three decades. It did not seem a reality in the 1990s with many opponents citing multiple barriers to the inception of technology. However, it does not only help to address various challenges but also redefined the way we interact. Today, the adoption of the internet does not coincide with the level of economic development in a country. On the contrary, its integration rests with the interest and capacities of individuals (Stockhammer 2017). A person in Kenya may have unlimited access to the internet while another in a typical developed state may not be fully utilizing the technology. Just like the cryptocurrencies, no one controls how we use the internet as it is a highly dynamic and decentralized technology. In the same way, cryptocurrencies are bound to redefine the way we carry out transactions and invest in critical economic avenues (Eyal 2017). Individuals will have the capacity to exploit various opportunities in the market fully as well as compete universally. Cryptocurrencies may be the answer to the various financial risks in Kenya.

2.1 Financial Shortcomings of the Developing States

The fact that no single authority controls cryptocurrencies is the heart of its applicability to the developing states, including Kenya. Digital money is a unifying factor for the world markets defined by growing inequality and financial malpractices. The diagram below exemplifies the huge contrasts between the wealthy and the poor in Kenya, and the difficulties in access to basic needs for the have-nots.

Figure 2: Inequality in Kenya

It may be the only way that the developing states can compete on the international stage especially through trade. Currently, global superpowers such as the United States, Britain, and China, compete favorably due to stronger currencies. On the contrary, it is not entirely based on the capacity to offer superior products. In this case, cryptocurrencies may be seen as unifying factors for trade, making it relevant to the developing states. The centralized financial systems also hinder economic progress especially for the developing countries (Fisher, 2015). Firstly, the third world countries have the least incentives to save and invest. Individual business people end up relying more on the public and private lender. The situation promote dependence as the investors have to be continuously affiliated to the banks and other money lenders.

Secondly, most of the loans attract high-interest rates coupled with additional processing fees. Financial regulators are at the heart of the pricing of loans and may not be focused on the utility of the financial incentives. The next diagram demonstrates how financial regulation is a complex establishment in the market. It is also the basis of various crimes such as laundering.

Figure 3: Complexity of financial regulation

Most of the prospective investor in the third world countries grapple the lack of knowledge regarding the operation of the financial markets. A principal area of contention regards consumer protection policies. The public is often a subject of manipulation by the banks and other individual financial institutions (Rossi & Miola 2017). Inadequate consumer protection exemplifies significant contracts between the financial markets of the developed states, and those of Kenya, an ideal example of a developing country. Third world countries establish the highest case of fraud and misappropriation of funds. On the other hand, accountability for financial crimes also wants for in the developing states. The situation demystifies the lack of secure and reliable platforms for carrying out transactions.

The series of shortcomings regarding consumer regulation are prime indications of financial risk for different reasons. On the side of the investors, individuals and corporates are increasingly reluctant to part with critical institutions such as banks and private lenders. The lack of awareness of the implications of certain fees acts as a hindrance to taking extra credit for funding various schemes. The unprecedented rise of mobile banking and small and medium enterprises (SMEs) is also an area of interest regarding the rising level of risks in the financial markets. A large number of subscribers lose their money on unidentifiable means. It may be in the form of hidden charges, unrealistic penalties, and failures resulting from third parties. In this case, one ends up falling out with the financial sector opting to low-scale investments or employment. The situation is also a leading cause of dependence in the third world countries.

Regarding the institutions, the level of financial risk involves the inability to predict the actions of the citizens in the economy. Subscribers who end up getting frustrated fail to use the various financial services in the marketplace. The banks fail to meet their targets regarding profitability and end up charging higher interest to remain

profitable in the economy (Halimanjaya 2015). The inability to establish the conditions of the market over time constraints decisions making in the financial sector. Just like individual investors, banks also operate as businesses and rely on certain conditions to remain profitable. All investment actions regard a predefined expectation concerning the economy an expected demand for loans will trigger an increase in interest rate while the banks will avail more funds for disposal. However, failure to sustain the need for loans in the long-run will create an imbalance in the economy. The result is that the existing monetary and fiscal policy fails to align with the actual conditions in the marketplace.

2.2 The State of Kenya Banking and Financial Systems Over the Years

While Kenya is still a developing state, it has one of the most vibrant economies in Africa. In fact, Kenya's financial markets rank fifth ahead of major African financial markets in South Africa, Namibia, Botswana, and Mauritius (Macharia, 2018). The assessment underlies important market pillars such as the dynamism of individual financial instruments, access to foreign exchange, and the authenticity of the regulation mechanism. The state of the financial system in Kenya also got to do with the existing economic opportunities. Over the years, the Kenyan economy has made minimal improvements, especially in the investment sector. The following is a display of the various categories of financial institutions in Kenya.

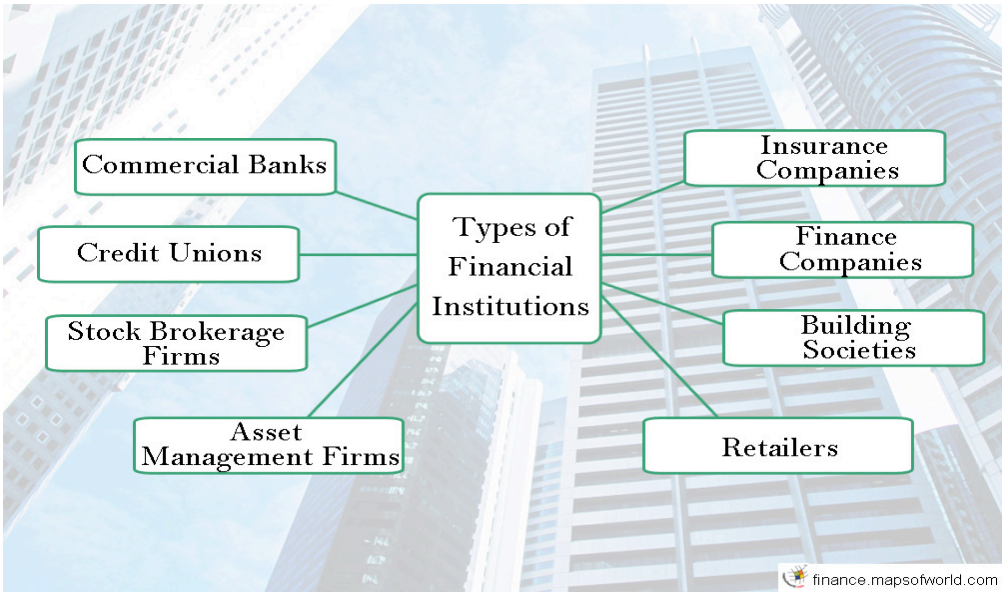

Figure 4: Kenyan banking and financial systems

Consumption by both the state and the households by far surpasses the level of income generations. However, it is essential to consider that multiple environmental and economic conditions favor investment. There is a low rate of crime, relatively high level of response from the public, and substantial technological and infrastructural support (Ngari & Muiruri 2014). In this case, the various market inconsistencies do not rule out the capacity of Kenya to support new investment or a new framework of carrying out transactions.

The Central Bank of Kenya (CBK) is the heart of the financial sector in the country. Its principal role is to control the activities of the rest of the banks including offering saving and lending services (Maina 2014). It is the custodian of vital monetary

policies. The institution controls the amount of money available in the economy as well as the velocity of the Kenyan currency. The institution also administers external reserves in line with the competitiveness of the local markets and the prosperity as a whole the establishment also coincides with the formulation of exchange controls. The CBK also must handle issues about external financial relations. Countries are continually competing at the global stage with the value of the domestic currency being a defining factor (Ngari & Muiruri 2014). Those with the superior trade policies often earn the best rewards, especially from trade. The CKB management must establish the most effective financial and macroeconomic policies for the country. It also works hand-in-hand with the Kenyan government to address critical economic issues such as inflation, unemployment, and inequality.

CBK's hand in the institutionalization of cryptocurrencies lie in its role as the facilitator of the adoption of financial systems in line with an underlying need. The establishment is not different with the necessary strategic actions such as increasing the supply of money, introducing new denominations and eliminating specific controls in the financial markets. The adoption of the digital currency would be an opportunity to address business risks in the country. Besides, the bank is an agent for the government. The establishment is most prominent in the implementation of monetary policies. The use of cryptocurrencies is not different from any relevant actions taken by CBK over the years. Unlike the state and the treasury that relies on the political direction of the country, CBK acts solely depending on theoretical macroeconomic frameworks. The management adopts a long-term initiative with two fundamental objectives, including the regulation of local currency and the sustainability of the local markets. With the identity and role of the CBK in mind, cryptocurrencies are ideal initiatives and solutions to the various problems facing the Kenyan markets.

CBK demystifies why the Kenyan banks should be at the forefront in the mitigation of financial risks in Kenya. The banking system controls most of the economic issues and decision-making in the country. Individuals and corporates continuously look out for existing products and incentives to save or invest. On the other hand, households' wariness on expenditure rests on the favorability or lack thereof of the banking systems in Kenya. The chain of the banking system extends beyond the regulator and covers all the relevant parties in the financial sector in Kenya. The CBK controls 43 commercial banks (Mdoe, Omolo, & Wawire 2018). It is responsible for the existing interest rates, lending capacity, and velocity of money in the economy. Mortgage companies are also essential components in the Kenyan banking sector. The institutions redefine the real estate sector and access to housing for the population. Kenya also hosts eight representative offices of foreign banks. Their role is to strike a balance between the local capacity of the domestic financial markets and the demands of the global markets. We also have nine microfinance banks, prominent for the provision of low-interest loans. The institutions play a fundamental role in encouraging investments mainly in the villages. They are also at the forefront of offering related financial information and educational services in the line of savings, expenditure, and finances.

2.3 State of Kenyan Banks and Mitigation of Financial Risks

A series of instructional and policy reforms defines that capacity of the Kenyan banks to address financial crises. The inclination towards a competitive landscape is the most prominent defining factor in the push for better institutional policies (Bonface & Ambrose 2015). However, the scenario presents a contention that is subject of financial risks in different ways. Firstly, while the commercial banks are principal agents in the implementation of macroeconomic policies, they are driven by the need to remain

competitive in a highly dynamic sector (Jagongo & Molonko 2017). It implies that the desire to makes profits cannot be replaced by the role of reforming the financial industry. Instead, what we have is a conflict of interest with individual banks trying to outdo one another. Besides, the central bank has a limited role in dealing with financial institutions (Auka & Jacob 2014). The apparent loophole paves the way for manipulation of the existing economic policy targeted at increasing profits. In this case, to the most significant extent, the Kenyan banks have multiple shortcomings as the agents for mitigating associated risks.

Secondly, Kenya grapples intermediation deficiency as competitive landscape continues to change in favor of the few large banks. In fact, the economic fortunes of the country rely on the level of segmentation of the Kenyan banking sector. Credit costs keen on rising even when the CBK continues to influence the actions of the commercial banks (Kambua 2015). The most important activities regard the gradual empowerment of the small banks in a way that risks and capacity may be spread to a large proportion of financial players. A series of mergers and acquisitions are also important initiatives targeted at building capacity in the banking sector. It is meant to integrate multiple financial institutions and relevant banking capacity.

3.0 The Place of Cryptocurrencies and Blockchain Technology in Addressing Financial Risks in Kenya

Even though digital money is not yet a reality as a central mode of transaction, it is bound to revolutionize the financial sector in the future. In fact, it may be the solution to the multiple financial issues facing the country. The most prominent problems about the Kenyan banks regard the inability to contain economic crises or financial pressure (Olweny & Shipho 2011). Two principal foundations of the apparent macroeconomic shortcomings come in handy. Firstly, it is difficult to predict the nature of the market both in the short-run and the long-run. It implies that the banking sector, led by the CBK fails to expeditiously apply its economic policies to address the critical financial issues in the country. For instance, knowledge of possible inflation over the next five years can trigger the establishment of relevant policies targeted at favoring both the consumers and the financial institutions. Secondly, outsiders have the upper hand in the manipulation of economic conditions to earn profits or redefine an existing monetary or fiscal policy. The private sector is the most significant defining factor regarding the influences of the external markets. For instance, private entities serving as multinational can easily take advantage of the strength and weakness of the local currency through international trade. The most significant challenge regards the fact that the CBK and the commercial banks cannot move at the same pace as the private investors.

Cryptocurrencies can facilitate the capacity of the Kenyan banks to contain the private sectors in multiple ways. Firstly, digital money empowers compliance. Any risks associated with the imbalance of the market can be addressed using cryptocurrencies (Wright & De Filippi 2015). The issues also relate closely to the troubled nature of contracts in Kenya. Cases of disputes are on the rise following fraudulent activities, failure to comply with fundamental contractual clauses, inability to meet deadlines, and loss of value. The underlying risk regarding the shortcoming entails the possibility of losing investors, compromising the identity of the banking sector in Kenya, and inconsistencies in the Kenyan markets. However, with the use of digital money, it is easier to match the expectation of all the parties to a contract (Herbert & Litchfield 2015). The transactions using cryptocurrencies are often instant and exemplify the interest of the various participants. Besides, as revealed in the attributes of the digital money, one can easily monitor a transaction. Unlike the traditional

contracts, digital cash prevents unscrupulous persons from altering the framework of an agreement. Each party is explicitly responsible for a well-defined role and monetary liability in a given transaction (Eyal 2017). Even where a dispute arises, relevant authorities can easily conceptualize an apparent crime.

As revealed in the discussion regarding the state of the Kenyan financial sector, the CBK and the government has the upper hand in the establishment of relevant fiscal and monetary policies. However, significant shortcomings in predicting the nature of the markets in the short-run and long-run make it difficult to adequately control the actions of the banks and the financial sector as a whole. The consequent perils include business risks, market contingencies, and credit eventualities as seen in the figure below.

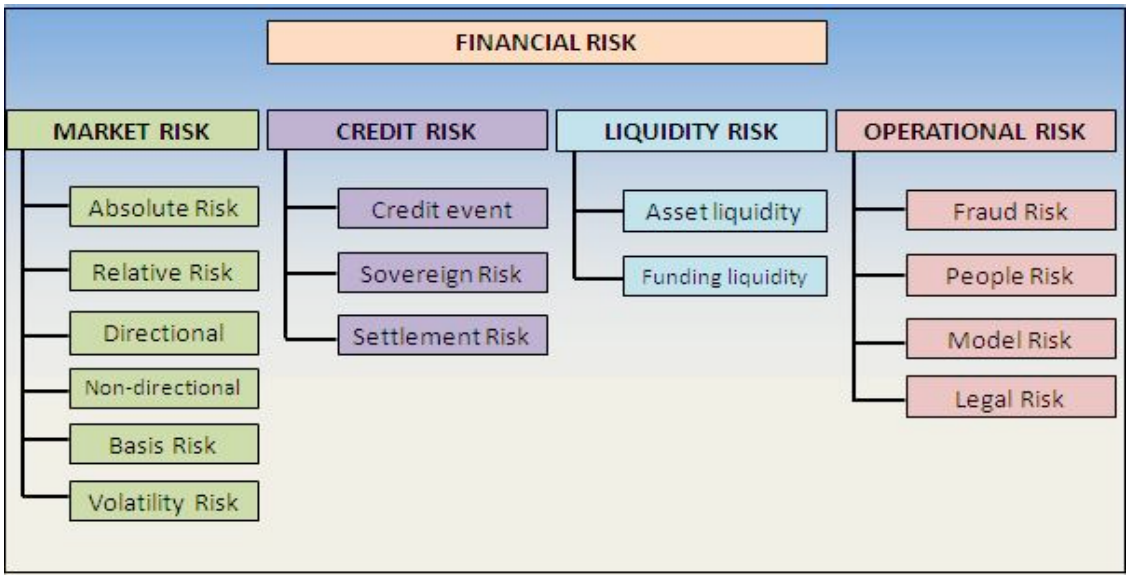

Figure 5: Financial Risks

Business risks regard the actions of the traders towards the maximization of shareholder value and profits. A prime example concerns the vast investments in marketing. Firms do not promote their products with the assurance of increased sales or a better business image. On the contrary, they undertake the initiative in the hope of greater fortunes. Besides, marketing is a long-term initiative targeted at improving the chances of the company and the rewards of the shareholders.

Market risks are also relevant to the application philosophical framework of the digital currencies. It regards the inconsistencies in the movement of the process of financial instruments. The stock market and the level of interest rates plays a fundamental role in the deteriorating of market risks. It is difficult to establish the movement of prices across the various financial units. The lack of timely information is one of the most prominent foundations of the disparity at hand. Individuals and corporates strife to monitor the actions of competitors and the changes in the value of transactions (Fredrick 2013). The stock market also propagates market risks due to the involvement of the multinationals and the foreign currencies. Both the local and international investors are party to the stock exchange. The situation enlarges the gap in access to information on two important grounds. Firstly, the financial element thrives on instantaneous investment decisions. In this case, the CBK is unable to circumvent any underlying risks mostly emanating from the actions of unscrupulous traders. Besides,

the stock market is highly centralized, where the controlling bodies can easily influence the actions, risks, and benefits of the investors.

The Kenyan banking system, led by the CBK may take advantage of the smart contracts, a defining establishment of the cryptocurrencies. It can be used to address the myriad risks owed to the financial actions of the private and public parties. Digital money works on flexible, verifiable and automatic systems (Nguyen 2016) Firstly, the technology eases the process of transacting by quantifying all the necessary implications of a contract. It includes all the essential steps, the parties involved, and the expected values of a deal. Secondly, the verification capabilities redefine the authoritativeness of the trader (Ouaddah, Elkalam & Ouahman 2017). Thus, it is difficult for one to propagate a wrong or fraudulent activity as the system requires a series of authentications. Thirdly, the automated systems mean that a transaction cannot be altered in favor of any party to a contract. It is fair to suggest that cryptocurrencies address the mistrust issues regarding a contract. One does not have to continually monitor the actions of the partners in a given deal. Any failure to comply with the underlying clauses will lender the transactions null and void.

3.1 Spreading Risks

Blockchain technology can play a hand in spreading risks in the Kenyan financial markets. The systems may be used to empower the regulatory framework of the CBK and the commercial banks. Liquidity risks is a prominent challenge relevant to the Kenya financial markets. It constrains the terms of payment, and the capacity to conduct transactions as per the desired time. The problem principally emanates from the fact that only a handful of economic policy influencers determined the favorability of the financial markets. Liquidity risk coincides with funding contingencies regarding the extent constrain in decision-making. One may not be assured of whether the investors will provide credit at the most desirable time.

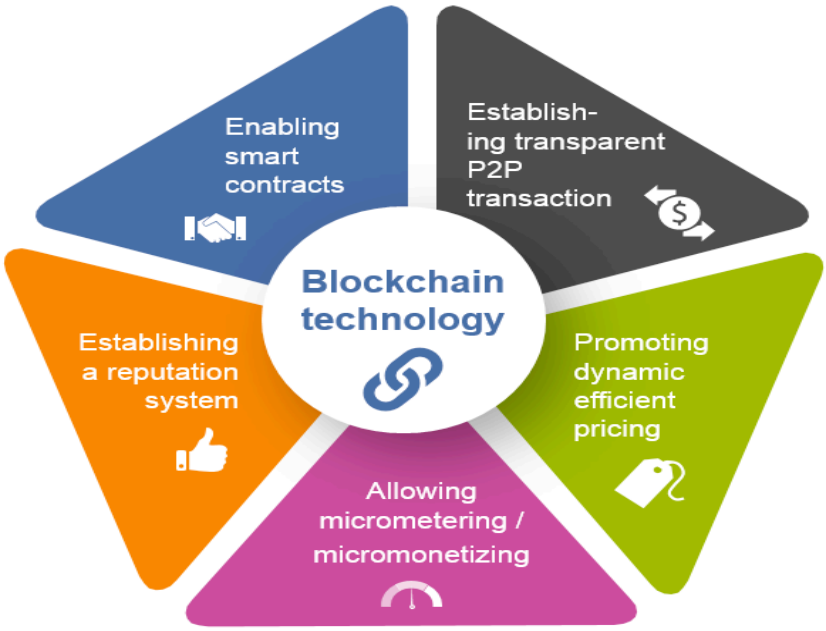

Figure 6: How blockchains facilitate the spreading of risks (Takahashi 2017)

The decentralization element is the key to coping with liquidity and funding risks. Cryptocurrencies can facilitate accessibility to everyone in the economy (Swan, 2015). Two significant incentives come in handy for the implementer of the blockchain technology. Firstly, any resultant risk would not hurt an entire industry, but the specific individuals connected to a chain of transactions. As we speak today, over 30% of Kenyans are already parties to a Bitcoin wallet, arguably the most dominant cryptocurrency in the world (Macharia, 2018). The tremendous inception of the technology has been primarily boosted by the unprecedented use of the various mobile money banking systems. The diagram below demonstrates how mobile money integrates the banking systems, and is the forefront in the conceptualization of blockchain technology.

Figure 7: Decentralization

The establishments improve the control of the users. It is increasingly easier to monitor the movement of funds. In this case, the baking sector appreciates the needs to enhance the capacity of the customers. Access to information remains an important aspect regarding the institutionalization of various financial technology (Böhme et al., 2015). The developments are geared towards the spreading of risks as people seize multiple opportunities to save and invest.

As seen in the infrastructure of blockchains, a global network controls the cryptocurrencies. The following diagram is a visual identification of the blockchain networks.

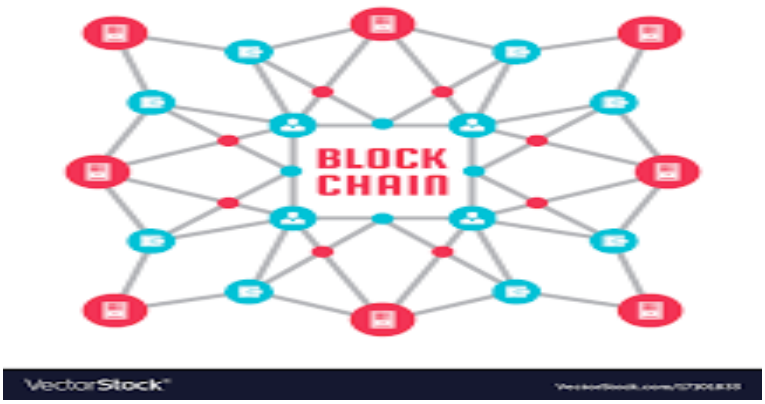

Figure 8: Blockchains

The consequent decentralization enhances uniformity in the financial sector (Zheng et al. 2017). Banks can use the systems to eliminate the middlemen who often constrain the capacity of the individual traders to enter into contracts. Cryptocurrencies operate on a user-to-to user basis such that it does not provide for the intermediaries in the first place. What we have instead is mass collaboration from the various economic players. Market players will be interested in aligning with an existing macroeconomic policy to avoid being left out in case of possible benefits or suffering any negative consequences alone. In this case, Kenyan banks can employ cryptocurrencies to reconcile all the participants in the financial markets. The small investors stand to gain massively due to the elimination of significant handles affiliated with the traditional money. One can easily monitor their funds and take advantage of an opening for financial gain.

3.2 Being in Tandem with the Future of the Financial Service Sector

The assessment at hand is also meant to help conceptualize the realities of cryptocurrencies over the next few years. The analogy of the internet in the 1990s is a perfect prototype regarding not only the success but also the inevitability of blockchain technology and digital money in the financial markets. Many opponents ruled out the possibility of the internet redefining the way interact and carry out day-to-day activities. The evolution of cryptocurrencies takes a similar approach. It epitomizes a great deal of flexibility and reliability. Just like the internet, blockchain technology comprise numerous interconnected networks that make up a single platform (Fujimura et al. 2015). Various aspects reveal the possibility of Kenya employing cryptocurrencies as the fundamental units of quantifying transactions. The most prominent incentive regards the fact that the complexity of the existing financial system is the principal form of economic risk. Few people are aware of the composition of the present monetary system. It requires a sound knowledge of macroeconomics coupled with a thorough review of financial events over the past few decades.

The complexity implies that most of the financial decision-making rests on significant assumptions. For instance, investors will often rely on the affordability of the interest rates, level of economic growth and the political environment to save or invest. However, the favorability of lack thereof of the various macroeconomic parameters does not describe the status of the financial markets in entirety. The Kenyan banks can take advantage of the blockchain technology by moving money in multiple ways. The goal would be to bridge the gap in information and address any loopholes subject of any fraudulent activity. The unrestricted movement of capital is also the key to the creation of new financial brands. Cryptocurrencies pave the way for innovation as people thrive in the capacity to mine the digital money and leverage the ability to monitor their transactions.

3.3 Facilitation of Individual Financial Institutions

Blockchain technology and cryptocurrencies would enhance the Kenya banks' capacity to contain financial risks through the authentication of identity and value. The intermediaries and incumbents predominantly do the initiative. Two main issues arise with the involvement of the third parties in financial management. Firstly, the banks cannot rule out inconsistencies and conflicts of interest by the intermediaries. It means that any value arrived at does not coincide with the existing economic protocol. It may also imply that valuation is based on the activeness of an individual financial player. Secondly, the involvement of the intermediaries rules out the participation of the banks, especially CBK in addressing financial errors. The public and the investors end up

losing the value of the money and transactions based on the shortcoming of the intermediaries.

The use of smart contracts is the way forward regarding the distribution of value. As seen in the figure below, the establishment thrives on anonymity and automated codes.

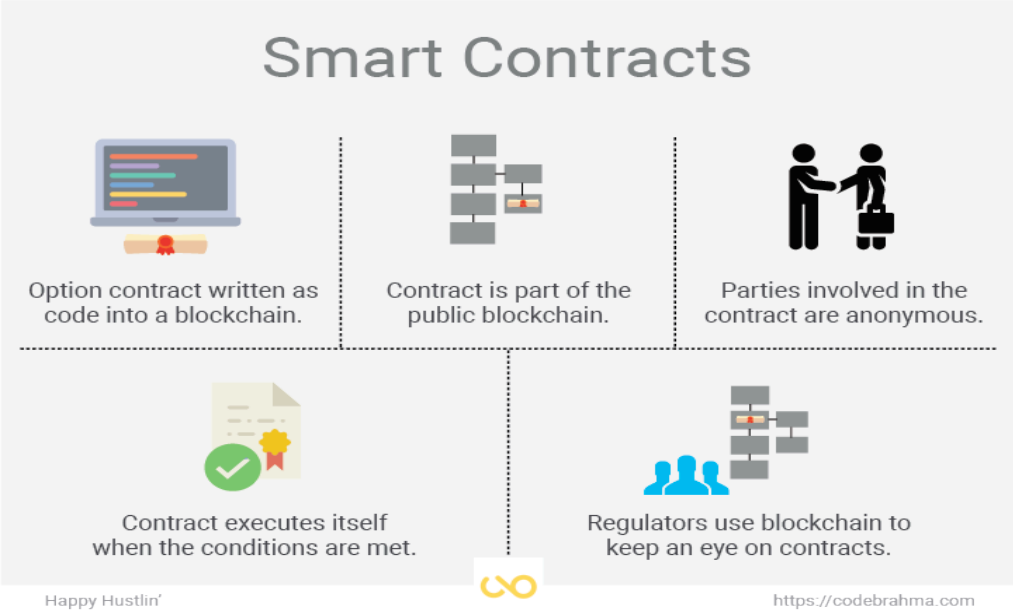

Figure 9: Execution of smart contracts (Codebrahma 2018)

A country witnesses the transfer of billions of dollars every day. However, it is not easy to prevent a dollar from being spent twice. A single error may lead to the perceived loss of significant amounts of money. Kenyan banks can take advantage of the blockchain technology to avert the underlying risks in different ways. Unlike the traditional financial systems, digital money avails smart contract to avoid significant transactions (Lemieux 2016). Various elements of the financial sector stand to gain from the expected improvements. Firstly, it would be easier to value assets across the multiple areas of the economy. The exchange of the assets would also be recorded instantaneously such that no money end up being used twice. Secondly, the banks can aid the government to value and issue bonds accurately. The provision caters for other related national assets such as minerals and stocks.

The use of cryptocurrencies can help the state to reduce the risk of loss following inaccurate authentication and valuation of assets. The facilitation will aid every party to the financial system including the household, the investors, and even the banks. Distribution of value will reduce the cost of transactions tremendously. The developments will be based on the elimination of intermediaries and improved decision-making capacity. Besides, the speed of making payments and processing transactions will increase substantially. The Kenyan banks will be at the forefront of implementing the various changes in multiple ways. Firstly, the institutions act as the primary sources of financial information. The adoption of blockchain will go an extra mile beyond the provision of relevant data. Also, digital money will create room for individual optimization of contracts (Vukolić 2015). It means that anyone will have the capacity to take advantage of any niche in the financial market, without the interference of the state, intermediaries or the CBK

4.0 Summary and Conclusion

Cryptocurrencies and Blockchain Technology is the embodiment of security and reliability in the financial markets. Anyone can create digital currency, is decentralized and cannot be regulated by the state or a private body. Its security system makes it a valid answer to the financial risks relevant to the Kenyan economy. The distributor ledger technology is the foundation of the decentralized attribute of cryptocurrency. On the other hand, Blockchains are the ideal back up and also serve as central repositories.

The encryption and decentralization of digital currencies are the most important aspects regarding the applicability of Cryptocurrencies and Blockchain Technology in Kenya. Traditional money revolves around multiple intermediaries beyond the central and underlying fiscal policies. Digital money supports individual investors as opposed to a dominant market player or authority. It is therefore ideal for the developing states often in a crisis trying to eliminate the middlemen.

The Central Bank of Kenya's (CBK) principal role is to control the activities of the rest of the banks including offering saving and lending services. It controls the amount of money available in the economy as well as the velocity of the Kenyan currency. The institution also administers external reserves in line with the competitiveness of the local markets and the prosperity as a whole the establishment also coincides with the formulation of exchange controls.

The fact that no single authority controls cryptocurrencies is the heart of its applicability in Kenya. Digital money is a unifying factor for the world markets defined by growing inequality and financial malpractices. The Kenyan banking system may take advantage of the smart contracts to address the myriad risks owed to the economic actions of the private and public parties.

Banks can use the digital money to eliminate intermediaries that often constrain the capacity of the individual traders to enter into contracts. Cryptocurrencies operate on a user-to-to user basis to enhance flexibility and control by the individual traders. The use of the technology can help the state to reduce the risk of loss owed to inaccurate authentication and valuation of assets.

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