

**A SURVEY OF THE NEED FOR A REGULATORY
FRAMEWORK ON ELECTRONIC TRADING AT THE
NAIROBI STOCK EXCHANGE**

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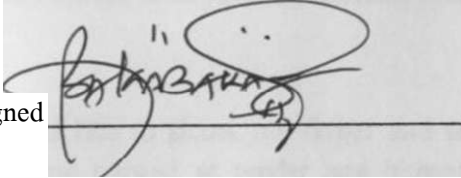
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UNIVERSITY OF NAIROBI

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DECLARATION

This research project is my original work and has not been submitted for examination in any other university.

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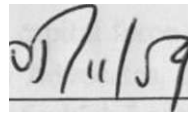
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This project has been submitted for examination with my approval as University Supervisor.

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J. ADUDA

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ABBREVIATIONS

Automated Trading System.....	ATS
Capital Markets Authority.....	CMA
Capital Market Tribunal.....	CMT
Central Depository and Settlement System.....	CDS
Chief Executive Officer.....	CEO
Electronic Commerce.....	E-commerce
Electronic Trading.....	E-trading
Initial Public Offer.....	IPO
International Organization of Securities Commission.....	IOSCO
Internet Service Providers.....	ISP
Johannesburg Stock Exchange.....	JSE
London Stock Exchange.....	LSE
Nairobi Stock Exchange.....	NSE
National Association of Securities Dealers Automated Quotations.....	NASDAQ
National Market System.....	NMS
Over the Counter.....	OTC
Regulatory and Supervisory Bodies.....	RSBs
Securities Exchange Commission.....	SEC
Self-Regulatory Organization.....	SRO
Straight-Through Processing.....	STP
Wide Area Network.....	WAN

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ABSTRACT

The objectives of this study were, first, to survey the need for a regulatory framework on electronic trading in Kenya and to highlight measures that need to be taken to minimize risks associated with electronic trading in the Nairobi Stock Exchange.

The involved analysis of primary data derived from responses from questionnaires administered on 60 stakeholders of the Nairobi Stock Exchange. A stratified random sampling technique was used to select the right representatives from the stakeholders of NSE excluding investors. The representatives selected as respondents were senior managers of the stakeholder firms and mainly serving in legal, reporting and/or compliance departments in their respective firms. The analysis of the data was undertaken using descriptive statistics with the help of the Statistical Package for Social Sciences (SPSS) and Factor Analysis. Tables and graphs were used extensively for data presentation to paint a clear picture of the shape of the distribution of data and general impression of values that could be seen as common or average.

The research concludes that there is extreme need for a new regulatory framework on electronic trading in Kenya. Further, the study concludes that there is need to implement measures to minimize risks associated with electronic trading in the Nairobi Stock Exchange. In essence, the study finds that there is need for a new regulatory framework for electronic trading in Kenya in order to hedge technology, operational, legal and political risks in the Nairobi Stock Exchange.

CHAPTER ONE

INTRODUCTION

1.1 Backflround of the study

Electronic trading refers to a wide variety of systems that tend towards **automation** of the financial markets ranging from simple order transmission services to **fully** fledged trade execution facilities. An electronic trading system is a facility that provides some or all of the following services: electronic order routing, automated trade execution and electronic dissemination of pre-trade (bid/offer quotes and spread) and post-trade information (transaction price and volume data). Electronic trading systems differ from traditional markets in that the use of information technology has resulted in automation of aspects of the trading process and the trading relationship both among dealers and between dealers and their customers. In addition, unlike traditional markets, electronic trading 'is both location-neutral and allows continuous multilateral interaction' (Allen *et al*, 2001).

With the advent of computers, securities transactions that were once slow, costly, and dependent on intensive human labor have become instantaneous and inexpensive. Technology has changed the way securities quotations and other market information is displayed, and the way orders are executed, cleared, and settled. The stock markets have resorted to electronic trading as the preferred method of transacting. Electronic trading as a mode of trading in the electronic trading has a number of advantages. First, it results in greater competition, resulting from lower transaction costs and increased transparency. Electronic trading also widens access to financial markets across several dimensions. Physical limitations that once limited those who could access the traditional markets are not relevant in electronic trading platforms. Remote linkages **remove** geographic limitations on potential users of financial markets enabling continuous multilateral interaction. Electronic trading also increases the opportunities to enter the financial market as a result of the fall in costs and enabling technology. In addition, electronic trading has potential to make financial markets more transparent. Further, electronic trading systems disseminate real-time pre- and post-trade information market-wide. As such, they readily **meet** the **different** financial markets users' preferences regarding information, some of which are too complex to put into practice in the traditional markets. (Allen *et al*, 2001).

Electronic trading is more cost-efficient. The automation of the trading process leads to increased operational efficiency of markets. For instance, due to increased computational speeds and ability to process trade-related information electronically and faster, electronic trading yields lower order processing costs. Electronic trading, also, makes it possible for trades to be passed straight through to the middle and back offices by linking the execution, confirmation, clearing and settlement of trades with market risk management and operational risk management procedures. This is known as straight through- processing, or STP, which does away with intermediate manual intervention and so has the potential not only to reduce the overhead costs for back office handling, but also to minimize the risk of errors in trade reporting and record keeping and to make risk management more effective. Operational efficiency is also improved because of the automation and integration of other trade related processes, thus enabling a further reduction in the associated staff costs. (Bank of International Settlements, 2003).

In addition, electronic trading has increased competition between stock exchanges. E-trading has significantly removed barriers within the financial services sector with the result that it is accessible to global competition. For instance, an investor in Kenya can trade shares in NASDAQ by a click of a button. Lastly, e-trading has translated to tighter spreads. The "spread" on an instrument is the difference between the best buying and selling prices being quoted. It represents the profit being made by the market makers. The increase in liquidity, competition and transparency has led to tightened. (Barrett & Scott, 2008).

On the other hand, electronic trading as a mode of trading in the stock market is attended by several disadvantages. First, the transparency afforded by electronic trading increases the potential for abuse of the privacy of users of the electronic trading system. It is also likely that the changes to transparency rules may benefit one group of participants and their objectives at the expense of another, creating winners and losers. This is because, definitely, transparency arrangements affect the balance of information among participants. (Bank of International Settlements, 2003).

Fraud is a big problem on the internet and investors can easily be tricked by hackers and other fraudsters. The fact that most of the time you are making a transaction across the internet you never see who the other person is selling the product or service, how do you know that the reviews for a site are legitimate and secure information you are providing really is secure. The result is that security of

transactions is not easily guaranteed. According to Valentine (2003), if the financial market regulators are not careful, a breakdown of the system may result. This once happened in Nairobi Stock Exchange when the Automated Trading System (ATS) broke down for three (3) hours with enormous loss of investors' returns in billions Kenya shillings.

The current legal framework regulating electronic trading, as is with the law that governs the Internet, is still uncertain the world over. Electronic transactions across boundaries have raised many unanswered questions on intellectual property and contract law as well as the issues of transnational application of laws. Aspects of privacy have also featured in the debate on the regulation of Internet and e-commerce. (Barber & Odean, 2001).

Kenya is yet to enact laws regulating electronic trading. The only regulatory framework for electronic trading is the Nairobi Stock Exchange ATS trading rules. The CMA is also yet to review the rules applying to market intermediaries to factor in information technology companies that now play a direct or indirect role in electronic trading. According to the Report published in the Standard (Okoth, 2008), there is a possibility of brokers trading in investor-client's shares without the latter's knowledge and consent. Needless to say, this phenomenon has led honest investors to lose millions of shillings whenever brokerage firms collapse. In turn, it is undermining the integrity of the NSE market.

The Kenyan regulatory framework for financial markets and electronic trading is inadequate for the purpose and in dire need of governance reforms. In particular, the Capital Markets Authority has been diagnosed as a key hindrance rather than facilitator of efficient regulation of financial markets in Kenya. The CMA has enormous powers and is susceptible to political manipulation given that its members are subject to appointment by the executive. There is also no clear framework for ensuring the accountability of the CMA for its regulatory decisions. As a matter of fact, the main deficiency of the law with regard to enforcement is that there are no adequate checks and balances to discourage the abuse of the powers available to CMA. In addition, the current electronic trading framework characterized by NSE Automated Trading Rules is deficient.

There are also no provisions for specific objectives for regulation of electronic trading in Kenya. One is left to infer the objectives from the general objectives of regulation of financial markets in Kenya as outlined in the mandate of the Capital Markets Authority. Further, the adequacy or otherwise of resources for facilitating regulatory governance of electronic trading in the NSE is not clear. There is uncertainty as to whether or not the law provides for adequate financing of regulation of electronic trading in Kenya as to secure its independence.

Given the ability of electronic trading systems to power trading via use of remote servers, internationalization of financial markets regulation has assumed a critical importance. There is, thus, need to promote regional and international cooperation in regulation of financial markets and electronic trading in Kenya. There is also need to regulate the increasing use of postings on corporate websites or e-mail as a means of disclosure in view of the prohibition against insiders to trade before the disclosure has been adequately disseminated to the market. There are also new agents of insider trading that electronic trading is likely to facilitate e.g. hackers and Internet Services Providers (ISPs). Needless to say, the current regulatory framework does not anticipate this challenge to regulation of insider trading.

The existing regulatory framework in Kenya does not address issues relating to Internet-based offers of shares and advertisements. There is a lacuna for regulatory framework for dissemination of securities information online for instance through posting of prospectuses and company reports. The law still anticipates disclosure through paper-based document which although a reliable and secure method is a very expensive compared to the electronic medium. In a nutshell, it is not in doubt that the Kenyan regulatory framework is not well-equipped to tackle the challenges precipitated by electronic trading. Hence, there is need for a survey to establish the real status of the legal and regulatory framework in Kenya.

There are four types of risks that are closely associated with electronic trading: technology, legal, operational and political risks. Technology risks are the risks that attend to introduction of new technology in the stock exchanges. These may, if not properly managed, exceed the technology benefits that accrue to the financial markets. For instance, risks surrounding information technology, for example, the internet such as network failure, lack of resources and skills, hacking and viruses and poor integration have the potential to yield greater negative impact on the financial markets than in the past. (Pandey, 2005).

Legal Risks are the risks that accompany regulatory change and which sometimes adversely affect the stature of an investment in the financial markets. Also, where there is still no regulatory framework in place, investors could shy away from engaging in the given process where they suspect the government will eventually pass unfavorable laws and/or regulations. For instance, in 1987 the U S tax laws changed dramatically and lessened the attractiveness of many existing limited partnerships that relied upon special tax considerations as part of their total returns. (Ferran, 2001).

Operational risk is the risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events which may come up as a result of introduction of electronic trading in any given stock exchange. The definition does not include strategic or reputational risks. Operational risks are characterized by, among others, internal and external fraud, employment practices and workplace safety, clients, products, and business practices, damage to physical assets including loss or damage to physical assets from natural disaster or other events, business disruption and system failures and execution, delivery, and process management failures. (Basel Committee, 2004).

Political risk is risk faced by investors, corporations, and governments as a result of complications which may arise out of political decisions, that is, any political change that alters the expected outcome and value of a given economic action by changing the probability of achieving business objectives. Political risk faced by firms can be defined as the risk of a strategic, financial, or personnel loss for a firm because of such nonmarket factors as macroeconomic and social policies (fiscal, monetary, trade, investment, industrial, income, labour, and developmental), or events related to political instability (for example, terrorism, riots, coups, civil war, and insurrection). Portfolio investors may face similar financial losses. For a business, the implication for political risk is that there is a measure of likelihood that political events may complicate its pursuit of earnings through direct impacts (such as taxes or fees) or indirect impacts (such as opportunity cost forgone). (Kennedy, 1988).

1-2 Statement of the Problem

introduction of electronic trading in the Nairobi Stock Exchange has guaranteed a number of advantages to the bourse including increasing transparency of the market, lowering the cost of

trading and increasing the competition to the market. Equally, it comes with some limitations and risks not known to the traditional market trading. For instance, electronic trading increases the prevalence of market abuse and incidences of market fraud. The regulation of electronic trading in the Nairobi Stock Exchange is therefore necessary not only to help circumvent the limitations of electronic trading, but also to sustain the advantages presented by this form of trading.

This study is a survey of the need for regulatory framework for electronic trading in the Nairobi Stock Exchange. The study will address questions concerning the preparedness and ability of Capital Markets Authority to respond to the regulatory challenges posed by electronic trading in Nairobi Stock Exchange. Further, the will explore the adequacy of the current legal, policy and regulatory framework on financial markets to address the risks brought about by introduction of electronic trading in die Nairobi Stock Exchange.

This study surveys the need for regulatory framework for electronic trading in Nairobi Stock Exchange. The study assesses the views of the NSE stakeholders on whether or not the existing regulatory framework for regulation of electronic trading in Kenya, that is, the NSE Automated Trading System (ATS) Rules addresses all the relevant issues relating to electronic trading. The study analyses the opinion of die stakeholders on how Kenya compares with other jurisdictions on regulation of electronic trading including United States of America, United Kingdom (Britain) and the Republic of South Africa Further, the view of stakeholders regarding performance of the NSE and CMA as regulatory institutions is also evaluated to determine the best institutional makeup for regulation of electronic trading in the Nairobi Stock Exchange. Lasdy, it makes recommendations towards more responsive and adequate regulation of electronic trading in emerging financial markets.

1.3 Objectives of the Study

The study has the following objectives:

1. To survey the need for a regulatory framework on electronic trading in Kenya
2. To highlight measures that need to be taken to minimize risks associated with electronic trading in the Nairobi Stock Exchange.

1.4 Significance of the Study

Electronic trading is still in its formative stages in Kenya having been adopted just recently in the Nairobi Stock Exchange (NSE). Generally, the regulatory framework for the electronic trading industry has not been discussed in any academic study. Similarly, no attempts have been made at surveying the regulatory framework for electronic trading. This study is thus justifiable in that it meets the twin responsibilities of clarifying and surveying the regulation of electronic trading in Kenya and the need to hedge technology and legal risks in the Nairobi Stock Exchange. There is consensus that certainty of regulations is good for business especially in such sensitive financial industry as electronic trading (electronic commerce). At the very least, certainty increases investors confidence in the regulatory framework and facilitates their protection against risks.

A clarification of the regulatory framework for electronic trading is also useful as a foundation for measures aimed at hedging technology, legal, operational and political risks respectively in the Nairobi Stock Exchange. The clarification of the regulatory framework afforded in the study is also useful to academics interested in financial markets, financial analysts, investors, professionals in the industry and other market players in their daily engagements and investors in the Nairobi Stock Exchange in measuring and determining risks and losses to their portfolio diversification. In addition, this study seeks to survey the adequacy of in the policy, legal and regulatory framework for electronic trading in the Nairobi Stock Exchange in hedging technology and legal risks and challenges posed by electronic trading technology. The study is therefore useful to policy makers in Kenya especially the Honourable Attorney General to promulgate appropriate legal regulatory framework for electronic trading in Kenya

This study is useful to the Board of Directors of the Nairobi Stock Exchange and the Capital Markets Authority in that it helps the two organizations appraise their role in regulating electronic trading in the Nairobi Stock Exchange. The study is also beneficial to the Attorney General's, the Kenya Law Reform Commission, the Minister for Finance and Members of Parliament as it outlines the case for legal reforms in the financial sector and capital markets. The study is also useful to students of finance in their quest for knowledge and as further reference for future studies on financial markets.

CHAPTER TWO:
LITERATURE REVIEW

2.0 Introduction

In this chapter, introduction of the key terms and concepts used in the study and particularly financial markets and electronic trading will be undertaken. In addition, the role of financial markets in the economy is discussed as well the implications of the advent of electronic trading on financial markets are reviewed. Further, the chapter considers the need to regulate financial markets in a free market economy. In addition, the question of whether or not there is need for a financial markets regulatory framework that is responsive to technological advances and particularly which caters for electronic trading in Kenya is addressed. The chapter also presents an overview of the regulatory framework regulating financial markets in Kenya generally and, in particular, electronic trading is undertaken. The self-regulatory rules regulating automated trading system in Nairobi Stock Exchange are discussed in detail. Lastly, the regulatory framework for electronic trading in United States, Britain and South Africa is discussed.

2.1 Financial Markets

Financial Markets are those markets where financial assets, mainly securities and money, are traded. Financial markets entail stock exchange (stock market) and the money markets. The money market is, unlike the stock exchange, not an organized exchange nor is it confined to money only as the name may suggest. Rather, it entails mainly wholesale transactions in money and short term credit carried out by licensed dealers most of whom are commercial banks. On the other hand, a stock exchange (also called the bourse in continental Europe) is an organized market for sale and purchase of securities such as shares, stocks, and bonds. It deals in securities for both businesses and governments. The Capital Markets Act defines the stock exchange as 'a market, exchange, securities organization or other place at which securities are offered for sale, purchase or exchange, including any clearing, settlement or transfer services connected therewith.' (Pandey, 2005).

2.2 Role of Financial Markets in the Kenyan Economy

Financial markets intermediate between units with surplus savings and those with investment deficits. As such, the financial markets facilitate the conversion of the dormant savings to

active investments. The result is a positive correlation between savings and economic growth. Financial markets play an important role in the raising of capital for industries and the government for financing industrial development, providing seed capital for new ventures as well as financing budget deficits. (Mbaru, 2002). This function is possible because of the unique role of financial markets in providing organized market for securities. As such, the financial markets serve the economy by facilitating the meeting of those who demand capital (businesses and governments) and those who supply capital (investors). Also, the investors are afforded an opportunity to reduce their risk by spreading their investments. Financial markets also make securities investments liquid enough to invest and divest without significant price changes. (Fleckner, 2008).

The financial markets are also increasingly playing the role of a source and distributor of information on investments as they generate a lot of information in their day to day transactions. Such information is critical in that, among others, it helps in provision of key financial services such as furnishing market reports, analyzing stocks, recommending certain securities for buy and sell, and so forth. Financial markets also offer quotes allowing prediction of future stock prices. The financial markets are increasingly playing an important role in setting corporate governance standards and policing their adherence by companies listed with them. In addition to the above functions, financial markets are business enterprises. While the business is not necessarily a commercial business, it is definitively a business, and as for every business, those who run it and own it want to retain and improve its standing. So, even though stock exchanges have regulatory powers, they are still businesses rather than governmental bodies or agencies, where the pressure for good performance is normally much lower. In fact, with demutualization, financial markets are also getting listed just like other companies. Thus, like other major business, financial markets also contribute to the economy in their capacity as businesses. (Fleckner, 2008).

The above roles allow financial markets, especially in emerging economies, to play an important role as catalysts for the catching-up process of the economy. For instance, financial markets are important partners in focusing investments and marshalling resources to investment areas that the government proposes to be important for economic growth. The performance and the welfare of financial markets is also an important determinant of investor confidence in a given economy especially due to their important role in investor protection. So that where the financial markets of a country are robust and steady and their indicators

portent future growth, foreign direct investment is likely to be attract and retained. (Mbaru, 2002).

23 Electronic Trading

A discussion of the impact of electronic trading and its regulation requires a common understanding of what actually constitutes "electronic trading" and its key features. In this study, the term "electronic trading" is afforded a broad definition and encompasses a wide variety of systems that tend towards automation of the financial markets ranging from simple order transmission services to fully fledged trade execution facilities. An electronic trading system is a facility that provides some or all of the following services: electronic order routing, automated trade execution and electronic dissemination of pre-trade (bid/offer quotes and spread) and post-trade information (transaction price and volume data).

Electronic trading systems differ from traditional markets in several respects. For instance, the use of information technology has resulted in automation of aspects of the trading process and the trading relationship both among dealers and between dealers and their customers. (Securities and Exchange Commission) In addition, electronic trading 'is both location-neutral and allows continuous multilateral interaction.' In order to trade, common physical location of users is unnecessary as long as they can connect to the electronic trading system Also, unlike traditional location-neutral trading, such as telephone-based dealer markets, electronic trading allows continuous multilateral interaction. Electronic trading is capable of easy expansion as its systems can be scaled up to handle more trades simply by increasing the capacity of the computer network. This is unlike traditional markets where the size of the floor has to be physically expanded, or the number and/or capacity of intermediaries active in a phone-based market increased, a much more costly process. The implication is that electronic trading systems can easily exploit economies of scale and reduce operational costs to a far greater extent than can traditional markets. This scalability is often exploited to reach more dealers and by extension a wider customer base than available to traditional markets. (Allen et al, 2001).

Electronic trading allows straight-through processing (STP), that is, the seamless integration of the different parts of the trading process, starting from displaying pre-trade information

and ending with risk management. In traditional markets, different systems handle different parts of the trading process (for example, order placement and risk management). It is, therefore, worth noting that electronic trading does not only affect front office activities, but can also have implications for the setup and functioning of the back office. Electronic trading platforms are rapidly gaining ground in financial Markets as the main mode of trading. Their adoption has transformed the economic landscape especially in emerging financial markets and is proving a force for change in market architecture and consequential trading possibilities. At present, financial markets are segmented into an inter-dealer segment and a dealer-to-customer segment. However, electronic trading is making it technically feasible for the market structure to move to a centralized order book, where end-users can transact directly with each other. (Allen et al, 2001).

Electronic trading normally results in greater competition, resulting from lower costs and increased transparency. The reaction is increased pressure on dealers' margins, to which they are responding in different ways. The larger ones may try to compensate for lower margins by chasing more volume which electronic trading can facilitate by enabling greater scalability. The other dealers have to unbundle their services and concentrate on their niches. Dealers may also need to reconsider their business models. For example, they will possibly require a different mix of skills from their sales force, emphasizing advice and relationship more than execution, which will also be reflected in a change from current incentives and pay structures. Electronic trading has widened access to financial markets across several dimensions. First, physical limitations are not relevant in electronic trading platforms and, as a result, additional users can now participate at minimal marginal cost. This has removed the economic need to limit access through membership restrictions. Remote linkages of e-trading have removed geographic limitations on potential users of financial markets enabling continuous multilateral interaction. In addition, the opportunities to enter the market are also greater than hitherto in the light of the fall in costs and enabling technology. The issuers of securities are also afforded a greater opportunity to access a wider pool of potential investors. (Allen et al, 2001).

Electronic trading has the potential to make financial markets more transparent. This relates to the ability of electronic systems to provide the owner with a full log of the transaction behaviour of the users. Electronic trading creates the potential for a very high degree of transparency across the whole trading process. To be sure, electronic trading systems can

disseminate real-time pre- and post-trade information market-wide. Conversely, they can operate with minimal information leakage, in a manner that trading based on personal contact could not achieve. They can more readily meet different users' preferences regarding information, some of which were once too complex to put into practice. However, there is need to balance on the market transparency with privacy of users of electronic trading system There is likelihood that a degree of anonymity would have positive effects on the way many markets function. It is also likely that the changes to transparency rules will tend to benefit one group of participants and their objectives at the expense of another, creating winners and losers. This does not augur well with the current regulatory focus which focuses on imposing disclosure requirements to level the investment playing field and ensure fairness of information across the spectrum of the financial market. Electronic trading is cost-efficient due to increased operational efficiency of markets. The result is reduced cost of trading. For instance, due to increased computational speeds and ability to process trade-related information electronically and faster, electronic trading yields lower order processing costs. Electronic trading, also, makes it possible for trades to be passed straight through to the middle and back offices. This reduces the overhead costs for back office handling and the risk of errors in trade reporting and record keeping and to make risk management more effective. (Allen et al, 2001).

Electronic trading was introduced in Nairobi Stock Exchange in September 2006 and has since yielded tremendous results. In particular, the entire process from trading to settlement in Nairobi Stock Exchange was automated. The result has been increased certainty in the exchange's transactions. While prior to implementation of the ATS the exchange could not guarantee simple procedures such as settlement within T+5 days(T+ means the indicated number of days after the day the transaction is affected days guaranteed), this is now possible. The implementation of the ATS has played a catalyst role in the deepening of the markets, through the ability to increase the volumes traded. The Safaricom Limited initial public offer (IPO), the biggest in Sub Saharan Africa to date, is evidence of the ability to transact large volumes at ease. (Wanguyu, 2008).

2.4 Capital Markets Authority Regulation

The capital Markets authority (CMA) is the body charged with regulating financial markets and electronic trading in Kenya The CMA's responsibility with regard to electronic trading

includes regulating (a) the transfer and dissemination of market information to a wider number of users within and between networks; (b) the offer, distribution or delivery in electronic form of securities or services ordinarily provided by licensed persons; and (c) the execution of securities transactions without the need for parties to the transaction to be physically present at the same location. The CMA is authorized by the law to exercise and discharge a raft of powers, duties and functions. CMA has power to frame rules and guidelines on all matters within its jurisdiction including electronic trading. (Capital Markets Authority, Section 12) The Authority has responsibility to remove impediments to creation of incentives for investments. The CMA may use this mandate to boost electronic trading systems which is indispensable especially in tapping off-shore investments. Further, the Authority is responsible for the protection of investors' interests The CMA may formulate rules, regulations and guidelines for protect investors. (Capital Markets Authority, Section 12) Indeed, the Authority has formulated a number of regulations that impact indirectly on regulation of electronic trading in Kenya including the Capital Markets Act (Licensing Rules and Regulations) 2002). However, it is yet to formulate a regulatory framework solely dedicated to electronic trading. (Capital Markets Authority, Section 11).

2.5 Automated Trading System Trading Rules

The Nairobi Stock Exchange has enacted Automated Trading System rules to regulate automated trading system which have been in force since September 2003. These rules are enforceable at the discretion of the Chief Executive Officer (CEO) of the NSE (Rule 3, NSE Automated Trading System Trading Rules). The Rules are divided into 13 sections which include general access rules, rules regulating access through remote trading, rules regulating access through trading floor, rules on conduct and dress code and regulations on disaster recovery and transition. In addition, there are sections dedicated to orders, trading procedures, dispute resolution and transition The rules are binding on all members of the exchange and their representatives. The members are required to designate their ATS operators who are then allocated personal identification numbers. (Rule 4, NSE Automated Trading System Trading Rules).

Only these authorized ATS operators are supposed to access the ATS system Access to the ATS is to be only through the Remote Broker Server or through the Exchange Trading Workstations. Remote trading can, however, only be conducted through an authorized ATS operator. This is done through the Remote Broker Server available, owned and maintained by

the NSE. (Rule 4, NSE Automated Trading System Trading Rules). Only authorized persons can access the floor. The authorized persons include NSE members' representatives, ATS Operators, officers of the Exchange, officers of the CDSC, officers of the Authority, and any persons authorized by the Head of Trading or the Chief Executive.

Further, all persons on the Trading Floor are required to conduct themselves in a respectable and responsible manner. Also, persons on the Trading Floor are required to be well groomed. The dress code is formal. For the gentlemen, the dress code includes a jacket and a tie. (Rule 4, NSE Automated Trading System Trading Rules). The Head of Trading at NSE is the person responsible for interpreting the Trading Rules and settling all disputes on the Trading Floor. Any person aggrieved by any decision of the Head of Trading may appeal to the Chief Executive. If the aggrieved party is not satisfied with the decision of the Chief Executive further appeal is available before the Trading and Compliance Committee of NSE. (Rule 11).

2.6 The Central Depositories Act

The Central Depositories Act (Act No. 4 of 2000) was enacted to establish a central depository system in Kenya. A Central Depository System, generally, serves as the platform for electronic clearing, delivery and settlement of securities trade in financial markets. The Act sets out the framework for immobilization and eventual dematerialization of, and dealings in, securities in Kenya. Immobilization is the mopping up and the central holding of securities certificates which continue to be recognized as prima facie evidence of ownership. Dematerialization is the elimination of share certificates so that they cease to be relevant as legal evidence of ownership. (Section 2, Central Depositories Act).

The Act anticipates the Central Depository Systems to play a pivotal role in development of electronic trading if the duties given them are anything to go by. The Act provides in section 8(1) that:

"A central depository shall provide or cause to be provided all such depository, facilities as may be necessary to—

- (a) facilitate the immobilisation of securities;
- (b) facilitate the deposit and withdrawal of certificates in respect of immobilised securities;
- (c) facilitate the dematerialisation of securities;

- (d) open, maintain and close securities accounts;
- (e) facilitate the efficient transfer of book-entry securities;
- (f) facilitate the efficient process of cash payment in exchange for securities;
- (g) facilitate registration of dealings in book-entry securities;
- (h) operate securities accounts for the handling of book-entry securities and cash, if any;
- (i) facilitate the collection of fees and other charges as may be required;
- (j) ensure the safe custody of certificates and other document representing immobilised securities;
- (k) guard against falsification of any records or accounts required to be kept or maintained under the Act; and
- (l) establish a proper and efficient system for the verification, inspection, identification and recording of all book-entry securities with the central depository." (Section 8 of the Central Depositories Act).

Under the Act, every central depository is to do all such things as are necessary to ensure orderly dealings in immobilized and/or dematerialized securities. This entails ensuring that its CDS rules are efficient and effective in regulating electronic trading as well as ensuring its agents, issuers and other participants comply with the CDS rules and the law. (Section 9, Central Depositories Act). In 2004, the Capital Markets Authority promulgated the Central Depositories (Capital Markets) Rules, 2004 which laid the framework for governance of central depositories in Kenya. The rules set out the licensing and operational requirements to apply to applicants for Central Depository license. (Rule 3, Central Depositories (Capital Markets) Rules, 2004). However, most important for electronic trading regulation, the rules laid down rudimentary measures for ensuring the efficiency of the settlement system in Central Depository Systems.

The settlement mechanism anticipated by the rules is anchored in a common settlement bank in which every settlement participant has a settlement account to which their net obligations are credited or debited on each settlement date. The settlement system is to guarantee settlement by way of a guarantee fund which ensures that failure of settlement does not occur due to illiquidity or insolvency of a participant. (Part IV, Central Depositories (Capital Markets) Rules, 2004). At present, there is only one Central Depository System is manned by the Central Depository and Settlement Corporation (CDSC). The CDSC Company is owned

by the Nairobi Stock Exchange (20%), Members of NSE (18%), the Capital Markets Challenge Fund Limited-a consortium of 9 listed and unlisted companies (50%), the Capital Markets Authority Investor Compensation Fund (7%) and the Uganda and Tanzania stock exchanges (5%). (Waiyaki, 2005).

There is, thus, a regulatory challenge given the fact the CDS is an associate company of the stock exchange. It raises questions as to independence of settlement and delivery of the entity from the market players who control the stock exchange. It is moot whether the CDSC is capable of enforcing market rules strictly as required by law.

2.7 Case Studies on Regulation of Electronic Trading in Diaspora

Here, the study briefly considers regulation of financial markets and electronic trading in three other jurisdictions besides Kenya namely United States, United Kingdom and South Africa in an attempt to lay down a comparative analysis tool on which to gauge the adequacy or otherwise of the Kenyan framework on electronic trading.

2.7.1 Regulation of Electronic Trading in USA: Regulation of National Market System (NMS)

The Securities Exchange Commission (SEC) touted the proposal for Regulation NMS as the most important reform in the U.S. market structure regulatory framework since the establishment of the National Market System (NMS) in 1975. The Regulation NMS is described as 'a series of rules designed to modernize the regulatory structure of the U.S. equity markets.' The regulatory reforms were motivated by, among others, developments such as new and innovative trading technologies and were intended to counter order flow fragmentation, promote equal regulation of market centres and greater order interaction, and increase depth of trading interest. Regulation NMS has four main prongs. First is the trade-through rule, which focuses on protection of price priority among markets. Second is the market access rule, which aims to ensure equal access to market centres for all market participants. Then there is the sub-penny rule, which prohibits quoting in sub-penny increments. Finally, there is the market data rule, which proposes a new plan for the allocation of data fees among market centres that provide information on trading in the NMS. The discussion below outlines the scope and the rationale of each of the rules and their justifications as offered by the SEC. ((Dorsey et al, 2005).

(a) Trade-Through Rule

The trade-through rule is the most important aspect of regulation NMS. The rule, which officially is known as Order Protection Rule, is entailed in Rule 611 of SEC Regulations. It makes price an important factor in determining the priority of execution of orders in the new U.S. market structure regime. In particular, it requires trading venues to establish procedures and policies reasonably designed to prevent the purchase or sale of stock at a price that is inferior to a price displayed in another market. The main objective of the trade-through rule is to eliminate cases where, because trades originate from and/or are routed to separate trading venues, orders at the best price remain unexecuted while orders at worse prices are being executed. The rationale is that such phenomena harm the interests of all investors, whether they place market orders (i.e. orders to execute the trade at the prevailing market price) or limit orders (i.e. orders to execute the trade once a threshold price is reached). (Dorsey et al, 2005).

(b) Market Access rule

The Securities Exchange Commission has also adopted Rule 610 which establishes standards for promotion of fair and equitable access to quotations for all market participants. First, the new rule permits the use of private linkages entailed in automated trading systems to increase overall connectivity among market participants. Second, the rule puts a ceiling on the amount of access fees, limiting the amount that any trading centre can charge for accessing quotations to no more than \$0,003 per share. Finally, Rule 610 requires SROs to establish and enforce rules that prohibit their members from displaying quotations that lock or cross automated quotations of other trading centers. (Dorsey et al, 2005).

(c) Market data rule

The Commission, recognizing the importance of public dissemination of reliable market data as the basis of a strong National Market System allowed all investors access to the same information on the best prices available in the market through the market data rule. Further, the commission enacted measures for preserving the integrity and affordability of that consolidated stream of data to be one of its most important responsibilities. The Market Data Rule was precipitated by the fact that the previous plans for allocating revenue generated from the sale of market data had created incentives for certain distorting behavior among the market centres. Thus, the Commission adopted new formula for calculating revenue share in these plans which takes into account factors designed which accurately measure the relative

contributions of each market centre to the depth and liquidity of the National Market System and reward those market centres commensurately. (Dorsey et al, 2005).

(d) Sub-penny rule

The final piece of Regulation NMS is Rule 612 known as the Sub-Penny Rule. Under the Sub-Penny Rule, market participants are prohibited from displaying any quotations in increments smaller than \$0.01 unless the quotation is for less than \$1.00, in which case the minimum price variation may be \$0.0001. In the Commission's view, this rule will increase the transparency of the markets and addresses a concern that certain market participants step ahead of displayed orders for trivial amounts. (Dorsey et al, 2005).

2.12 The regulation of financial markets and electronic trading in United Kingdom

The regulation of financial markets and electronic trading in the United Kingdom is based on the Financial Services and Markets Act 2000 (FSMA 2000). FSMA 2000 is the Act of the Parliament created the Financial Services Authority (FSA) as a regulator for insurance, investment business and banking. There are a number of sections of the Act that have a bearing on financial market regulation and electronic markets. First is section 2 of the Act which outlines the regulatory objectives and mandate of the Financial Services Authority (FSA). The section mandates the FSA to take such measures as are necessary to promote market confidence and public awareness in investment opportunities and financial markets activities. Further, the FSA is tasked with protecting consumers of financial markets services and reducing financial crimes. This last objective is clearly relevant in regulation of electronic trading in that it emphasizes the need to protect investors as well as stamp out financial crimes which may arise in the wake of introduction of electronic trading.

Section 19, on the other hand, requires firms to obtain FSA authority before providing services in the financial markets. The section also gives the FSA the mandate to make regulations on licensing of financial markets operators and dealers. Given the way the section is worded in a general manner, it encompasses even new activities such as are entailed in electronic trading. Section 21 makes it a criminal offence to issue financial promotions in the United Kingdom unless issued or approved by an authorised firm or exempt via the Financial Promotions Order. This prohibition is a wide net and covers even online promotions and is aimed at protecting unsuspecting investor public from being drawn into fraudulent

investments activities. Related to the above, section 59 prohibits execution of controlling functions in any financial markets firm without approval by the FSA. Section 118 concerns market abuse. In essence, market abuse includes anti-competitive practices and insider trading. The FSMA 2000 makes comprehensive regulation on the aspect of insider trading which have arisen with introduction of electronic trading.

Section 132 establishes the Financial Services and Markets Tribunal to handle, among others, disputes arising from trading in financial markets. The Act in section 71 allows private persons to sue for damages if a person performing a controlled function is not approved. Under Section 150, private persons may also sue for damages if an authorised firm has breached financial regulation rules. This is similar to the financial markets regulations in Kenya which were recently relied on by the High Court in *Shah Munge & Partners Limited & Four Others v The Capital Markets Authority 2009 eKLR* (www.kenyalaw.org) to uphold the disciplinary action taken against the Shah Munge & partners by the Capital Markets Tribunal. In the case, it was unanimously held by Waweru J, Kubo J and Kasango J on May 14, 2009 that "...A stockbroker, who without reasonable cause occasions his client loss by refusal and/or neglect to purchase or sell should be held legally responsible." Section 138 grants the FSA powers to make rules regulating all aspects of financial markets including licensing, intermediary business activities, compliance and reporting. Section 165 gives the FSA power to require certain information. Section 397 makes it a criminal offence to mislead a market or investors.

2.7 J Regulation of Electronic Trading in the Republic of South Africa

The electronic trading system in Johannesburg Stock Exchange (JSE) was introduced over a three month period between March 1996 to June 1996. The aim was to foster transparency in the trading system as well as enhance security and investor protection. The electronic trading system at JSE essentially relies on central order book that is open to members via their remote workstations. Dealers enter buy and sell orders which are included anonymously in the summary display and the aggregate of these orders make up the order book for all dealers to view. The financial markets and electronic trading systems in the Republic of South Africa are regulated by the recently enacted Securities Services Act, No. 36 of 2004 (SSA). The SSA repeals, *among others*, the Stock Exchanges Control Act, 1985, the Financial Markets Control Act, 1989, the Custody and Administration of Securities Act, 1992 and the Insider Trading Act, 1998. In addition, it consolidates the subject matter of these repealed statutes

into one Act. To be sure, it also amends these Acts and, also, introduces new and more effective provisions encompassing electronic trading into the law. (www.jse.org, 2008)).

As regards regulation of electronic trading in Johannesburg Stock Exchange, it is noteworthy exchange is recognized under the Securities Services Act as a self-regulatory organization. As such, it accepts responsibility for regulating all trade in Usted equities and warrants on individual equities. Further, the JSE is responsible for regulating the electronic trading of equities registered under it in order to ensure investor protection and reduction of systemic risk and thus promote its integrity. However, the JSE is required to report to the Registrar of Stock Exchanges and is subject to the Securities Services Act. The JSE has established a Surveillance Department, responsible for the surveillance of market activities and member activities to ensure compliance with the Act, JSE rules, directives and gazettes. The Department also monitors the capital adequacy requirements of members on a daily basis and conducts special investigations. The operations of this department are critical to regulation of electronic trading in JSE. Importantly, there is regulatory symbiosis in that the electronic trading systems provide improved transparency, security and full audit trails. Facilities also exist to "replay" the market which assists the Surveillance Department when analyzing particular market events. The main order book is the place where orders are routed, managed and matched. Orders which are received by the system and not immediately matched are stored in the order book and ranked in price/time priority. The main order book shows bids and offers where the bid represents the aggregate number of shares for each buying price level and the offer represents the aggregate number of shares for each selling price level. (Beelders & Massey, 2002).

2.8 Theories of Financial Markets Regulation

There are a few theories that attempt to explain the existence and forms of financial markets regulation The following are the most prominent.

2.8.1 Psychological attraction theory of financial regulation

The psychological attraction theory is a recent theory which posits that regulation is the result of psychological biases on the part of political participants- voters, politicians, bureaucrats, and media commentators; and of regulatory ideologies that exploit these biases. Some key elements of the psychological attraction approach are: scapegoating and xenophobia, fairness and reciprocity norms, overconfidence, and mood effects. This approach further emphasises

emergent effects that arise from the interactions of individuals with psychological biases. For example, availability cascades and ideological replicators have powerful effects on regulatory outcomes. The psychological theory may be contrasted with the other theories of regulation below which are based on the assumption that regulation is based on empirical considerations. (Hirshleifer et al, 2009).

2J&2 The competition for regulation theory versus capture theory

The competition for regulation theory suggests that there exists a market for regulation, in which consumers and producers compete. Regulation will serve the interests of those who are willing to offer the most for the regulation. Since regulation can be regarded as a public good, the free-rider problem suggests that the benefit to the individual consumer is likely to be small relative to the producer. Therefore producers will have more incentive to try and obtain favourable regulation through industry associations. A countervailing force is therefore the consumer lobby. On the other hand, the capture theory suggests that producers capture regulatory agencies and control them in their own interests. Vested interests reinforce the regulatory framework to support their interests, but the danger is that such behaviour would result in non-competitiveness in the financial markets, leading to long-run social loss. (Stigler,1971).

2.8 J The private-interest theory versus the public-interest theory

The private-interest theory treats regulation as a process in which some groups use the coercive power of the state to extract rents at the expense of other groups. The adherents of this theory dismiss financial markets regulation merely as a means of the government to earn revenue from the dealings in the capital markets. (Becker, 1983). In contrast, the public-interest theory sees financial markets regulation as government intervention to correct the market and avoid inefficiencies and maximize social welfare. As such, financial markets regulation is justified in that it maximises social welfare. (Joskow and Noll, 1981).

In essence, the public interest theory argues that regulation is an attempt to correct for market failures, such as monopoly, externalities and lack of information. For example, the social cost of the failure of a financial institution may be much higher than the private cost to the institution itself. Therefore, financial institutions left to themselves will accept more risk than is optimal from a systemic point of view, thus forming the basic case for government regulation of banking activity and the establishment of capital requirements. This study is

founded on the public interest theory and perceives external regulations on financial markets to be justified on four broad grounds which all relate to market failure. First is the moral hazard argument which is to the effect that if a market participant believes that the state will underwrite his losses, then behaviour will change. Second, is the widows and orphans argument which is to the effect that regulations provide protection to poorly (asymmetrically) informed clients. This argument is based on the view that small investors cannot assess properly the riskiness of financial institutions they deal with. Third is the public policy argument which calls for competition and free trade to prevent market abuses such as monopolisation of financial markets. Last but not least is the systemic risk issue which allows the state to prevent the failure of one participant to destabilize the whole system (Feldstein, 1972).

2.9 Empirical studies on electronic trading and regulation

Empirical analysis of electronic trading and its regulation especially in developing countries is relatively uncharted territory. However, that is not to say that there are no studies whose findings are applicable to electronic trading regulation. (Maitland 2001; Moodley, et al. 2002) Humphrey, et al. (2003) assessed the prevailing expectations about electronic commerce in developing countries. The study sampled electronic commerce initiatives and particularly the use of Internet-based open electronic marketplaces in developing country firms'. The paper found that electronic commerce was permeating major industries in developing countries including Kenya and thus it warranted regulatory attention. (Humphrey, et al. 2003).

Fung, et al. (2003) investigated the effects of the migration of the Hang Seng Index futures from open-outcry trading to electronic trading. Using trade data over a window of six months the study found evidence that, after the migration, the bid-ask spread of the futures contract decreases and the contribution of the futures price in information transmission increases. Furthermore, the asymmetry in volatility spillover reduces and the open interests of the futures market become smaller. These results suggest that the anonymity in trading and the higher speed of order execution in the electronic trading system attract informed traders to the futures market and increase the information flow. Further, they suggest the need to create mechanisms to protect the information disadvantaged traders from market abuses of the informed traders who are able to exploit the increase in information flow. (Fung, et al. 2003). Maghyreh & Omet (2003) examine the efficiency of the Jordanian Capital Market after its automation. They review the activities of Jordanian stock exchange (Amman Securities

Market, ASM) since it was established in 1978. In particular, they review the market activities after the manual trading system of the market was replaced by a computerized trading mechanism on 16 June 2000. The primary objective of the new system is to offer investors more protection and transparency. (Maghyereh & Omet, 2003).

Barrett & Scott (1999) present a preliminary analysis of case study based research exploring the shift from traditional 'open-outcry' to electronic trading in the major futures markets in London and Chicago. It outlines the emergence of electronic trading in these Markets, with the aim of examining the influences that will shape the operation and interaction between major global futures exchanges in the electronic markets of the new millennium. The study finds that there is shift in the nature of risk with the emergence of electronic trading in major global futures markets. Further, it unearths a connection between the local issues concerning electronic trading to their broader social, economic and political context. It, therefore, emerges that a new regulatory paradigm shift is needed in regulating electronic trading quite apart from the system that has been regulating traditional markets. (Barrett & Scott, 1999).

Durnev & Nain (2000) examine whether insider trading laws achieve the primary objective for which they are introduced - protecting uninformed investors from private information-based trading. They used a sample of 2,827 firms from 21 countries and found that on average, insider trading restrictions reduce private information trading. They further found that when control is concentrated in the hands of large shareholders, insider trading regulation is less effective in reducing private information trading. They suggest that controlling shareholders who are banned from trading may resort to covert expropriation of firm resources, creating more information asymmetry and thereby encouraging private information trading by informed outsiders. Further, they find that firms with concentrated control rights located in countries with stricter insider trading laws score lower on corporate governance, disclose less and have more opaque earnings. This study is relevant given that insider trading is one of the negative effects of electronic trading as a result of increase in information among traders. (Durnev & Nain, 2000).

KPMG (2007) assesses, among others, the case for demutualization of the NSE. The study sampled stakeholders including institutional and individual investors, fund managers, stock brokers, listed companies, policy makers and others emerging market regulators and stock

exchanges. The conclusion was that the current corporate structure of the NSE is factor responsible for the perceived low market confidence and lack of corporate governance. Overall, 89.6% of the respondents in the study agreed that the membership, majority directorship representation and management control of the NSE by one group of stakeholders, that is, the stockbrokers has created governance weaknesses which affected regulation of all sectors of the NSE including electronic trading. (Kiruthu,2007).

Vas Consultants (2006) assess the viability of Over-The-Counter (OTC) market in Kenya and recommend the form and appropriate policy and regulatory framework. The population of the study involved a sample of 88 entities selected from all stakeholders in the capital markets in Kenya stratified into policy makers, market facilitators (stockbrokers, investment bankers and investment advisors), listed companies, potential OTC companies, institutional and individual investors. In the findings of the study, there was an overwhelming (90%) support for the need of a OTC market in Kenya However, among others, risk of dealing in the market was cited as one of the limitations impeding development of OTC and capital markets in Kenya Further, it was revealed that for OTC to thrive, it will require the use of well regulated electronic trading system to back it up. (Vas Consultants,2006). CMA (2008) recorded a number of complaints relating to stock market in the year 2007 relating to electronic trading. In particular, the Capital Markets Authority identified the following as the activities complained against by investors: failure to execute client orders, execution of unauthorized transactions, delay of IPO refunds, forgery and churning. Hence, the regulator concluded that there is still need to continue in the endeavour to protect investors, ensure that markets are fair, efficient and transparent and to in reduce risks and ensure that it facilitates and not impede capital market development. (CMA.2008).

Mulanga (2005) involved a study to establish the why there has been low listing even with increased fiscal incentives. The study was carried out mainly through review of previous research works and analysis of raw data collected from the following institutions: listed companies, companies with potential for listing, capital market intermediaries, IOSCO members and policy makers, research institutions and other professionals. There have been 17 de-listings at the NSE between 1990 and 2008. In effect, the study found that delisting is attributable to. among others, poor state of regulatory infrastructure in the NSE Indeed, the regulatory framework in the NSE was identified as being stringent to the extent that it discourages potential issuers. The study, therefore, recommended a comprehensive review of

the regulatory framework to be undertaken in tandem with global trends. Further, the study proposed the implementation of new regulatory framework for products and services that are unavailable in our stock markets and likely to introduce with advent of electronic trading in the NSE. (CMA,2005).

Clearly, none of the above studies explore area of the current study directly. However, all the studies above point to the fact electronic commerce and electronic trading are growing and that in their wake, they pose new regulatory challenges. As such, the current study is justified given that it seeks to survey the need and the status of regulation of electronic trading in Kenya's financial markets.

2.10 Conclusion

In this chapter, the key concepts in the study, namely financial markets, stock exchange and electronic trading have been clarified. The role of financial markets as market regulators, corporate governance standards setter, as a capital resources mobilizer, provider of investment information and business enterprise have also been discussed at length. In the same vein, the impact of electronic trading in financial markets has also been examined. The chapter has also discussed the status of electronic trading and its regulation in the Nairobi Stock Exchange exposing the gaps which needs to be filled. It has emerged that the regulatory framework for electronic trading in Kenya is in early and formative stages and requires emergent midwifery.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains how the survey of the need for regulatory framework on electronic trading at the Nairobi Stock Exchange was undertaken. It also highlights the research design, data sources and procedure and methodology used in data collection and the analysis of the research data.

3.2 Research Design

The research design entails a survey of the need for a regulatory framework on electronic trading at the Nairobi Stock Exchange. The aim is to establish the modes of hedging technology, legal, operational and political risks attending the introduction of electronic trading in the Nairobi Stock Exchange.

Survey is a non-experimental, descriptive research method which encompasses measurement procedures that involve asking questions to respondents. Surveys are divided into two broad categories: the questionnaire and the interview. Questionnaires are usually paper-and-pencil instruments that the respondent completes. Interviews are completed by the interviewer based on the respondent says. (Sanders et al, 2007)

3.3 Population

According to Bell (2003), population refers to the complete set of counts derived from objects possessing one or more common characteristics. In this study, the population consists of all the key stakeholders of the Nairobi Stock Exchange. The population, thus, includes institutional and individual investors, listed companies, the Central Depository System Company (CDSC), the Capital Markets Authority (CMA), market facilitators

(stockbrokers, investment bankers and investment advisors) and finance and economics academics and policy makers.

3.4 Sample Size & Sample Selection

A stratified random sampling technique is used to select the right representatives from the stakeholders of NSE excluding investors. This is because the technique is the best-suited in ensuring that all the important views are represented in the sample. The representatives are senior managers of the stakeholder firms and mainly serving in legal, reporting and/or compliance departments in their respective firms. This group of professionals is preferred because of their wealth of knowledge, expertise and experience on financial markets regulatory practice in Kenya. To enhance representativeness, the researcher targets working with a minimum of sixty (60) firms. (Mugenda, 2008; Fisher *et al*, 1983).

3.5 Data Collection

The study uses both primary and secondary data. The primary data is collected through a structured questionnaire administered on a drop and pick basis. The question has both open-ended questions as well as Likert type scale with five (5) ratings. The questionnaire aims at collecting information on the state of electronic trading in Kenya, the prevalence of technology and legal risks in Kenya's financial market on account of electronic trading and the need for regulatory framework for electronic trading in NSE. (Kothari, 1990).

The secondary data is drawn from published sources such as the annual financial statements, statistical records of trading in NSE, regulatory instruments in place and existing academic publications on the subject of the study. Also, published like data on regulation of electronic trading in stock exchanges on select jurisdictions will be explored for comparative study and analysis.

3.6 Data Analysis Techniques

After the data had successfully been collected, analysis is undertaken using descriptive statistics with the help of the Statistical Package for Social Sciences (SPSS). Tables and graphs are used extensively for data presentation in order to give a clearer picture of the shape of the distribution of data and general impression of values that could be seen as common or average. (Mugenda, 2008; De Villis, 1991).

CHAPTER FOUR

DATA FINDINGS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter discusses data findings, analysis, interpretation and presentation. Data was analyzed using the SPSS program and presented using bar graphs and pie charts. The study was an empirical investigation that clarified and surveyed the need for regulation of electronic trading in Kenya and the need to hedge technology, legal, operational and political risks in the Nairobi Stock Exchange. There is consensus that certainty of regulations is good for business especially in such sensitive financial industry as electronic trading (electronic commerce).

The chapter is divided into two sections with the first section dealing with demographic information. The second section gives the findings on specific information, based on the respondents' opinion on the electronic trading in the Nairobi Stock Exchange (NSE) and on the current status of the regulations carried out by the government and the stock market.

4.2 Demographic Findings

This section gives the general information of the respondents and their firms. This included the name of the organization, how long the respondent's organization has been in operation and whether the firm is a key stakeholder in the Nairobi Stock Exchange (NSE)

Table 4.1: Length of time the respondents' organization has been in operation

	Frequency	Percent
less than 3 years	5	8.3
less than 5 years	6	10.0
less than 10 years	28	46.7
10 years and above	21	35.0
Total	60	100.0

Table 4.1 shows how long the respondent's organization has been in operation. Majority 46.7% of the organizations had operated for about 10 years, with the least (10 0%) being in operation for less than 3 years. This implies that the study was in a position to get reliable information on the need for regulatory framework in electronic trading since the firms have been in operation for a long time. The same information is put in form of a bar graph as shown below.

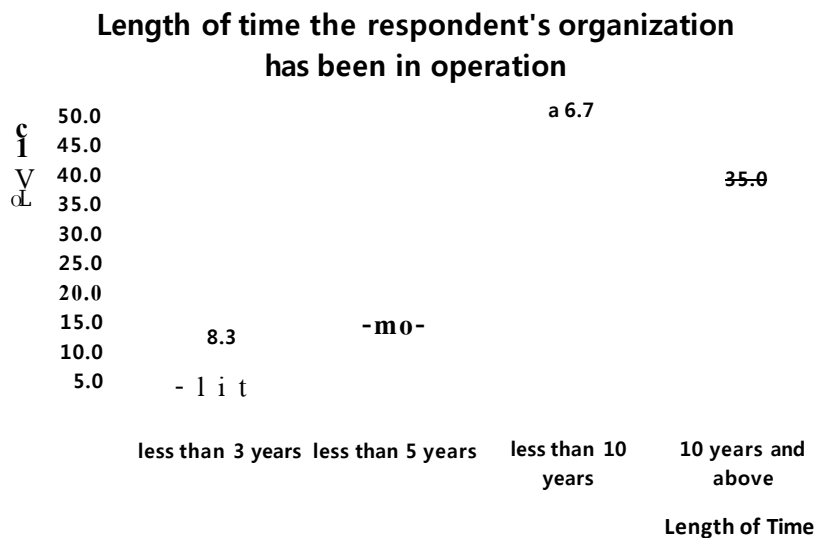


Table 4.2: The stages of development of electronic trading in the NSE

	Frequency	Percent
Advanced Stage	16	26.7
Developed Stage	28	46.7
Underdeveloped Stage	16	26.7
Total	60	100.0

Table 4.2 explains the respondents' opinion on the stages of development of electronic trading in the NSE. In essence, advanced stage would entail adoption of sophisticated systems of e-trading and e-commerce to match the levels in developed countries such as United States and United Kingdom. Developed stage means electronic trading has been introduced and is operational but is yet to attain optimal performance experienced in advanced stage. On the other hand, underdeveloped stage is the lowest level of development where electronic trading systems are hardly in place or if in existence, they are not operating efficiently. Using these criteria majority 46.7% thought that the NSE is in the developed stage. The remaining percentage divides equally in their opinion that it's either in the advanced stage or in the underdeveloped stage. This explains that the electronic trading is present in the NSE but not many people are conversant with it. This is represented in the pie chart below.

The stage of development of electronic trading in the NSE

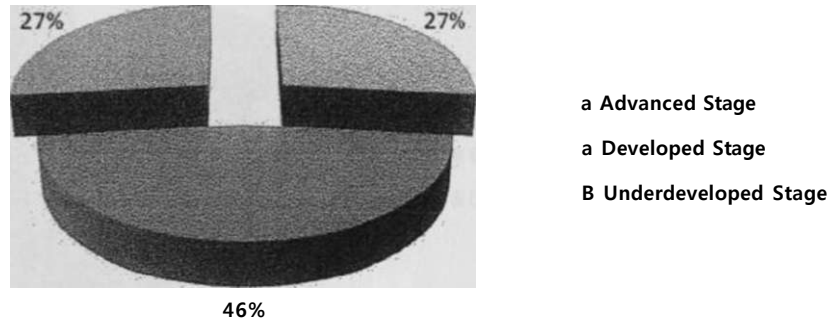


Table 4.3: The current status of regulation of electronic trading in NSE

	Frequency	Percent
Over-regulated	14	23.3
Optimally regulated	34	56.7
Under-regulated	12	20.0
Total	60	100.0

Table 4.3 shows the respondents' opinion on the current status of regulation of electronic trading in the NSE. Majority 56.7% think that it's optimally regulated. The least 20.0% thought that it's under regulated. This means that there is need for the stakeholders to review the regulations of electronic trading to assist smooth running of the businesses in the exchange market. This information is put in form of a pie chart below

The current status of regulation of electronic trading in NSE

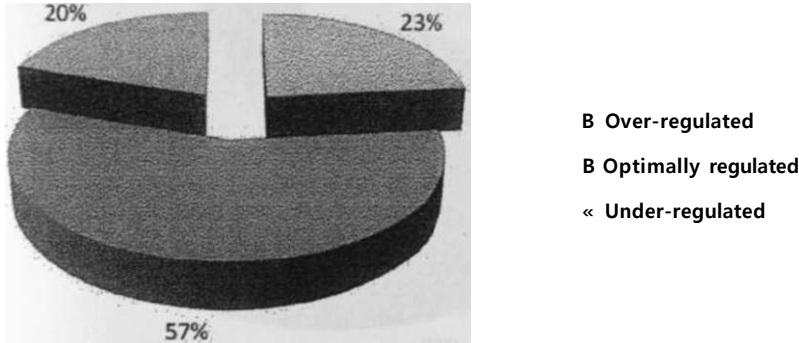


Table 4.4: Need to regulate electronic trading (e-commerce) in the NSE

	Frequency	Percent
Yes	55	91.7
No	5	8.3
Total	60	100.0

Table 4.4 shows that there is need to regulate of electronic trading in the Nairobi Stock Exchange (NSE). Majority 91.7% felt that there is need to regulate the e-commerce while only 8.3% thought that there is no need. This implies that the stakeholders are in agreement as to the necessity of regulation of electronic trading whether this is achieved through self-regulation (Nairobi Stock Exchange) or Government regulation (Capital Markets Authority) or an hybrid of the two systems. This information is also expressed in form of a pie chart as shown below.

Whether there is need to regulate electronic trading (e-commerce) in the NSE

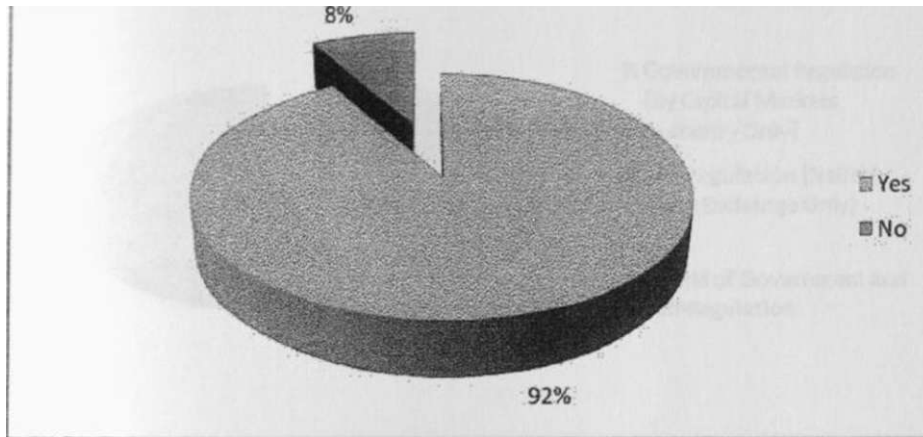


Table 4.5: Preferred regulation method.

	Frequency	Percent
Governmental Regulation {By Capital Markets Authority Only}	4	6.7
Self-Regulation {Nairobi Stock Exchange Only}	22	36.7
Hybrid of Government and Self-Regulation	34	56.7
Total	60	100.0

Table 4.5 shows slight majority of 56.7% of the respondents preferred hybrid of government and self-regulation method. Only 6.7% preferred government regulation that is by Capital Markets Authority (CMA) only. This means that a method that involves regulation of electronic trading by the CMA as well as Nairobi Stock Exchange (NSE) would be highly preferable. The same information is put in form of a pie chart.

The method the respondent prefers for regulation of electronic trading in the NSE

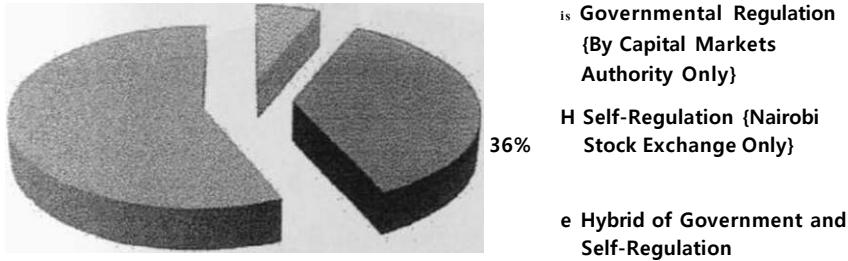


Table 4.6: Whether the use of electronic trading systems has brought about legal risks in the NSE

	Frequency	Percent
Yes	57	95.0
No	3	5.0
Total	60	100.0

Table 4.6 explains whether the use of electronic trading has brought about legal risks in the NSE. Majority 95% of the respondents felt that this trading has introduced legal risks in the exchange market, while only 5.0% felt that it has not. This means that the electronic trading has its own disadvantages which need to be addressed accordingly. This is also expressed in form of a pie chart.

**Whether the use of electronic trading systems
brought about operational risks in the NSE**

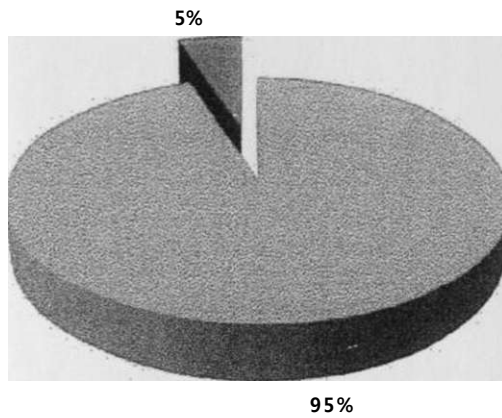


Table 4.7: Whether the use of electronic trading systems brought about technology risks in the NSE

	Frequency	Percent
Yes	57	95.0
No	3	5.0
Total	60	100.0

Table 4.7 shows whether the electronic trading systems has brought about technology risks in the NSE. Majority 95% of the respondents agree while only 5% disagrees that the electronic trading has brought about technology risks. This implies that there is need to put in place measures to avoid the losses that may be incurred due to the technological risks. The same information is put in form of a pie chart.

Whether the use of electronic trading systems brought about operational risks in the NSE

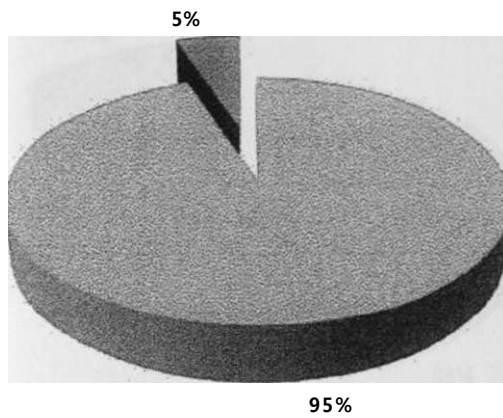
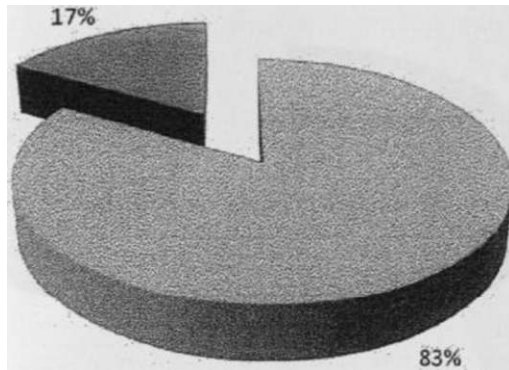


Table 4.8: **Whether the use of electronic trading systems has brought about operational risks in the NSE**

	Frequency	Percent
Yes	50	83.3
No	10	16.7
Total	60	100.0

Table 4.8 shows whether the use of electronic trading has brought about operational risks. Majority 83.3% of the respondents agree while 16.7% does not agree. This means that the electronic trading should be well regulated to minimize these risks. The same information is presented in form of the pie chart below.

Whether the use of electronic trading systems brought about operational risks in the NSE



- 3 Yes
- No

Table 4.2: Whether the use of electronic trading systems brought about political risks in the NSE

	Frequency	Percent
Yes	35	58.3
No	25	41.7
Total	60	100.0

Table 4.9 explains whether the electronic trading has brought about political risks. It emerges that 58.3% agreed while 41.7% disagreed. This implies that there is political interference due to the use of electronic trading. The pie chart below explains the same.

**Whether the use of electronic trading systems
brought about operational risks in the NSE**

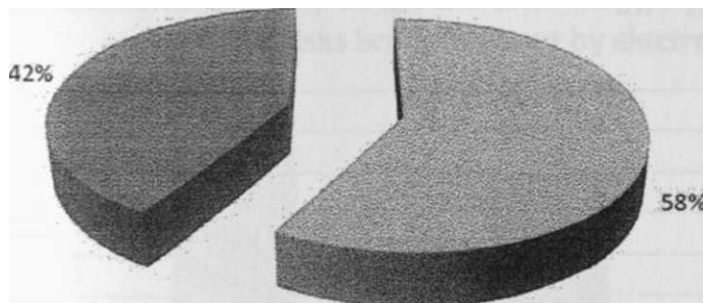


Table 4.10: The regulatory measures that the respondents would recommend to hedge the technology, legal, operational and political risks brought about by electronic trading (e-commerce)

	Frequency	Percent
Enforcement of a new regulatory framework by the CMA	34	56.7
Improvement of the existing framework on regulation of e-trading (e-commerce)	24	40.0
No measure is necessary	2	3.3
Total	60	100.0

Table 4.10 shows the recommended regulatory measures to help hedge technology, legal, operational and political risks brought about by electronic trading. Majority 56.7% recommended the enforcement of a new regulatory framework by the CMA, only 3.3% felt that no measure is necessary. While 40.0% recommended the improvement of the existing framework by the CMA this implies that a review of the existing framework and the adoption of new framework is important for progress.

The same is shown in form of a bar graph below.

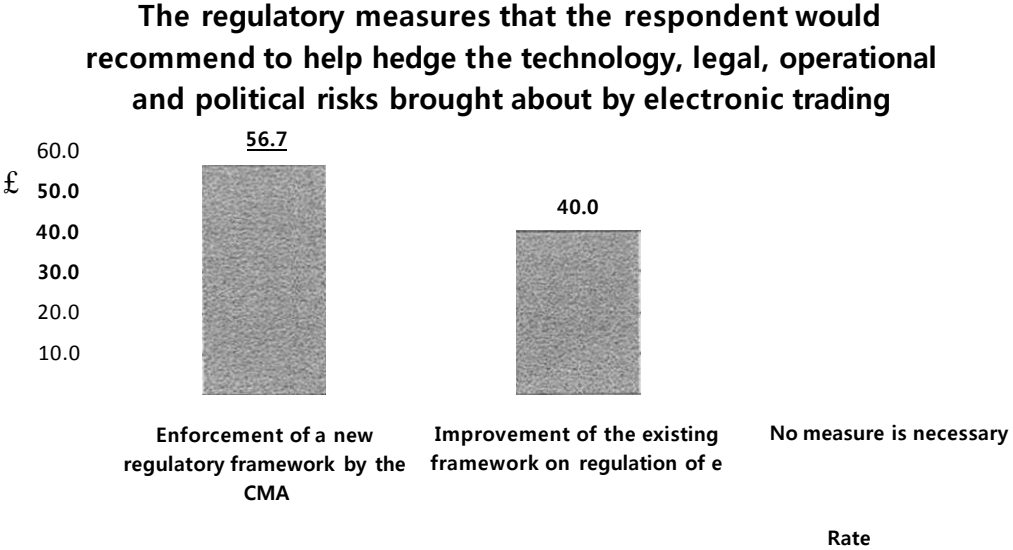


Table 4.3: Awareness of the existence of NSE Automated Trading System (ATS) Rules

	Frequency	Percent
Yes	58	96.7
No	2	3.3
Total	60	100.0

Table 4.11 demonstrates that the majority of 96.7% are aware of the existence of NSE Automated Trading System (ATS) Rules while 3.3% are not aware. This implies that the stakeholders are aware of the Nairobi stock exchange undertakings. The pie chart below explains the same.

Awareness of existence of NSE Automated Trading System (ATS) Rules

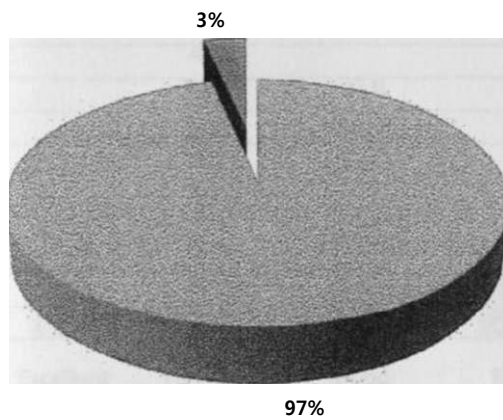


Table 4.12: Perception of the respondents-the use of the NSE ATS Rules as a mechanism of regulating electronic trading (e-commerce) in Kenya

	Frequency	Percent
Excellent	8	13.3
Very Good	24	40.0
Good	21	35.0
Fair	6	10.0
Poor	1	1.7
Total	60	100.0

Table 4.12 shows the respondents' rating in a scale of one to six of the NSE automated trading system. Majority 40.0% felt that it is very good while only 1.7% felt that it is poor. This implies that the ATS has achieved in minimizing the risks faced by the stake holders. The same information is expressed in form of a bar graph as shown below.

**Perception of the Respondents -the use of the NSE
ATS Rules as a mechanism of regulating electronic
trading in Kenya**

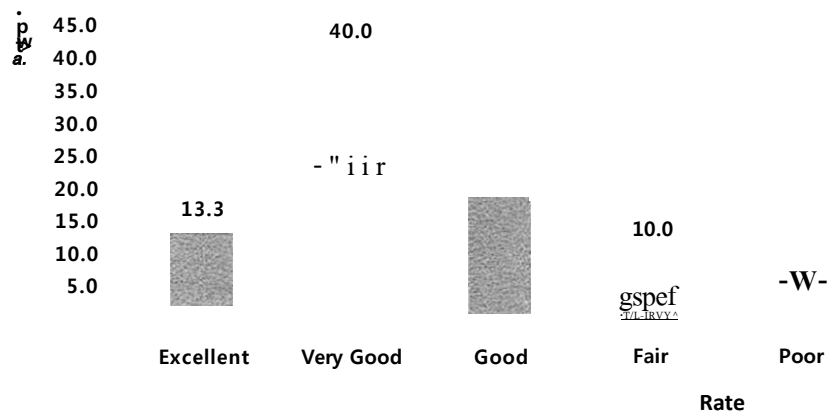
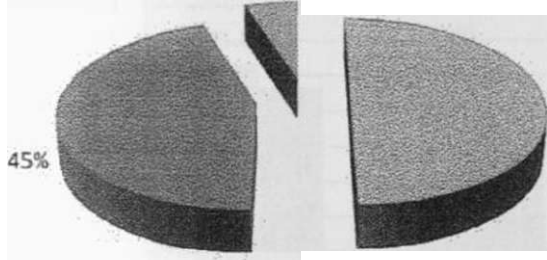


Table 4.13: How to hedge risks associated with electronic trading in the NSE

	Frequency	Percent
Enforcement of a new regulatory framework by the CMA	30	50.0
Improvement of the existing framework	27	45.0
No measure is necessary	3	5.0
Total	60	100.0

Table 4.14 shows the respondents' opinion on how to hedge risks associated with electronic trading in the NSE. Majority 50.0% suggested that a new regulatory framework by the CMA be put in place. Only 5% said that no measure is necessary. This implies that there is great need for a new regulatory framework. The same information is expressed in form of a piechart.

How to hedge risks associated with electronic trading in the NSE



- s Enforcement of a new regulatory framework by the CMA
- E Improvement of the existing framework on regulation
- a No measure is necessary

Table 4.14: Respondents' awareness of e-trading regulation in selected countries

	Frequencies		Percentages	
	Yes	No	Yes	No
United States of America	32	28	53.3	46.7
Republic of South Africa	38	22	63.3	36.7
United Kingdom	42	18	70.0	30.0

Table 4.14 shows respondents' awareness of e-trading regulation in selected countries. Most of the respondents know of the existence of regulation of electronic trading in United States of America, Republic of South Africa and in United Kingdom, with majority 70% being aware of these regulation of electronic trading in the United Kingdom, and only 53.3% knew of the regulations in the United States of America This implies that the regulatory framework could have borrowed more from the United Kingdom This is well interpreted in the bar graph below.

Respondents' awareness of e-trading regulation in selected countries

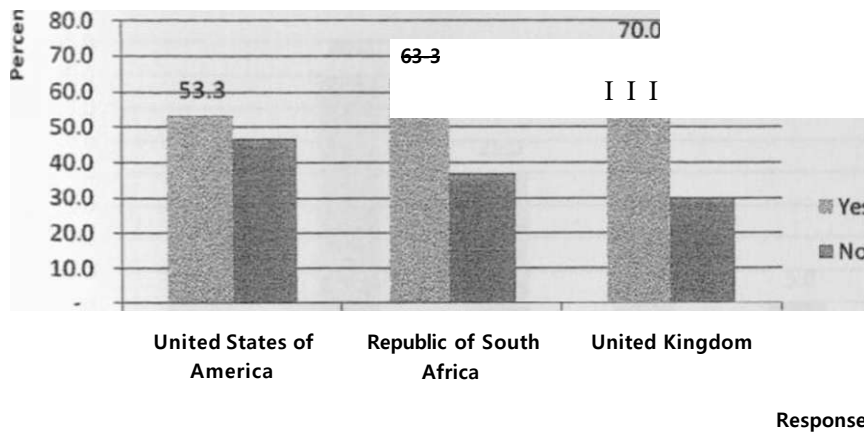


Table 4.15: How Kenya compares with other countries mentioned in relation to regulation of electronic trading (e-commerce) in the NSE.

	Frequency	Percent
Excellent	8	13.3
Very Good	24	40.0
Good	15	25.0
Fair	10	16.7
Poor	3	5.0
Total	60	100.0

Table 4.16 explains how Kenya compares with other countries in relation to regulation of electronic trading. Majority of 40.0% of the respondents thought that it is doing very well while only 5.0% rated its comparative performance as poor. This implies that the electronic trading can be expanded to other countries easily. This is further explained in the bar graph below.

How Kenya does compare with other countries mentioned in relation to regulation of electronic trading Problems with ATS Rules

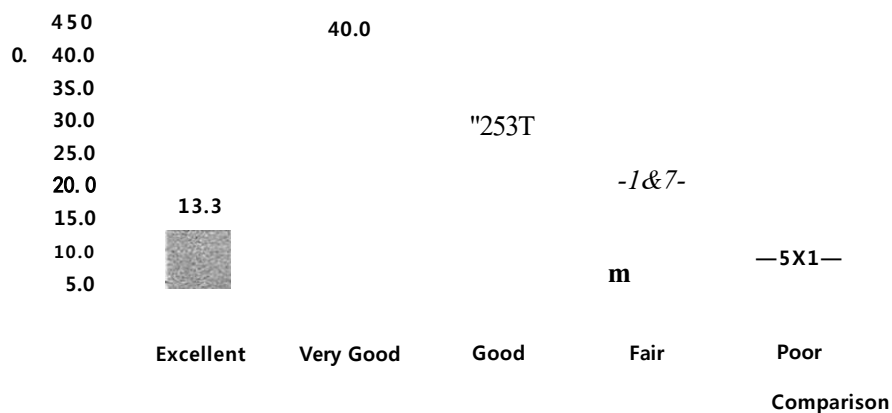


Table 4.4: Perception of the respondent on the performance of Capital Markets Authority (CMA) in this role in the past 3 years

	Frequency	Percent
Excellent	8	13.3
Very Good	24	40.0
Good	17	28.3
Fair	10	16.7
Poor	1	1.7
Total	60	100.0

Table 4.16 demonstrates that majority 40.0% rated it as very good while only 1.7% rated it as poor. This implies that the Capital Markets Authority (CMA) or the Government is in a shape to better regulation of electronic trading of NSE. The bar graph below explains further.

**Perception of the respondents' on performance of
Capital Markets Authority in the past 3 years**

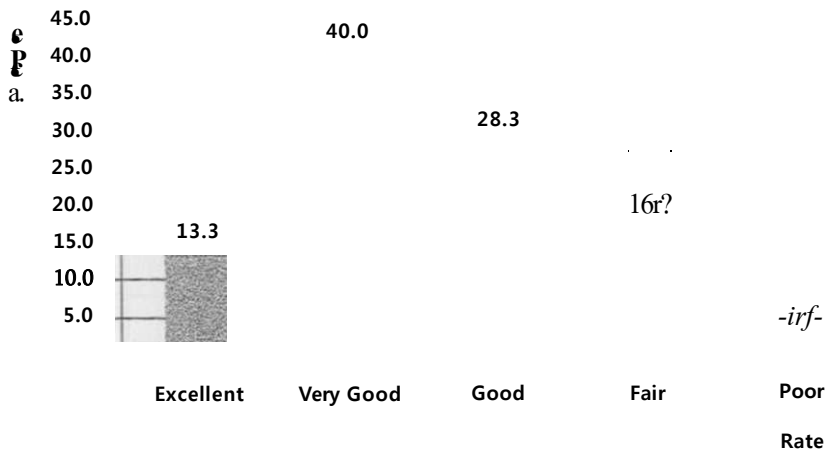
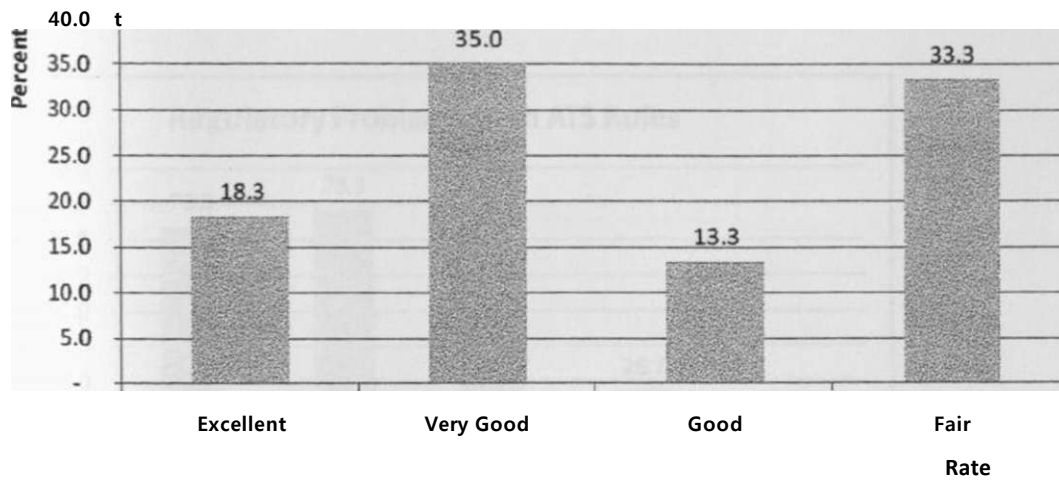


Table 4.17: Respondents' perception on the performance of the NSE as a self-regulator

	Frequency	Percent
Excellent	11	18.3
Very Good	21	35.0
Good	8	13.3
Fair	20	33.3
Total	60	100.0

Table 4.17 shows the respondents' perception of the performance of the NSE as a self regulator. Majority 35.0% of the respondents thought that it is good while the least 13.3% thought that it is just good. This implies that the NSE has a satisfactory regulatory framework though the respondents further suggest that it can be improved. This is also presented in form of a bar graph.

**How the respondent would you rate the performance of the
NSE as a self-regulator**



4.3 Multiple Response Findings

Table 4.1S: Regulatory Problems with ATS Rules

	Responses	Percent	Percent of Cases
	N		
Failure to execute client orders	44	32.8	73.3
Execution of unauthorized transactions	47	35.1	78.3
Delav of IPO refunds	26	19.4	43.3
Forgery	16	11.9	26.7
Churning	1	0.7	1.7
Total	134	100.0	223.3

Table 4.18 elaborates the regulatory problems facing electronic trading in the Nairobi Stock Exchange (NSE). The most popular problems mentioned by the respondents were the execution of unauthorized transactions (78.3%) as well as the failure to execute client orders (73.3). On the other hand, churning and forgery are not major problems as indicated by 1.7% and 26.7% of the

respondents respectively. This is an indication that the most serious regulatory problem in ATS rules is the execution are failure to execute client orders and unauthorized transactions. The details of these results are illustrated by the bar graph below.

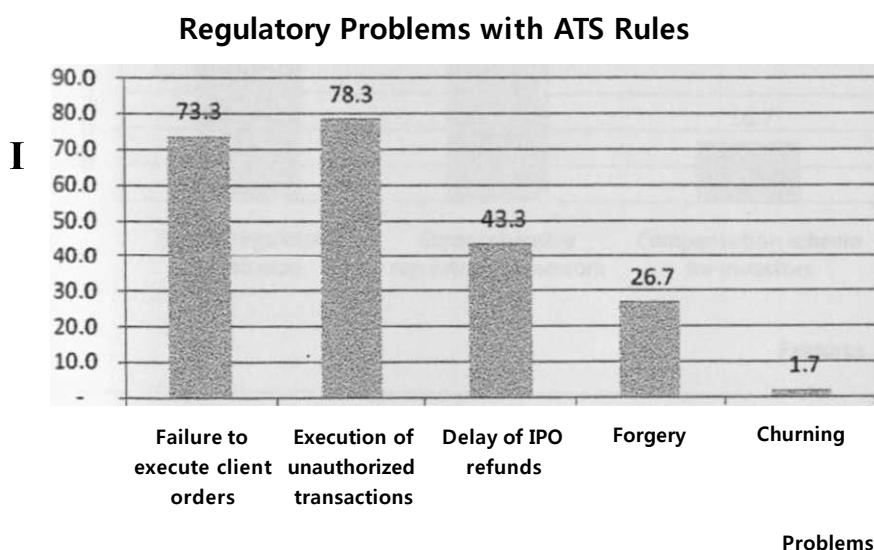


Table 4.19: Features of Regulation of ATS

	Responses	Percent	Percent of Cases
	N		
Strong regulatory institution	48	49.5	80.0
Comprehensive regulatory framework for ATS	39	40.2	65.0
Compensation scheme for investors	10	10.3	16.7
	97	100.0	161.7

The table above illustrates the features of regulation of ATS. According to the research, strong regulatory institutions were cited to be the most significant feature by a majority of 80% of the respondents. Other features are the comprehensive regulatory framework for ATS and compensation scheme for investors with 65.0% and 16.75 respectively

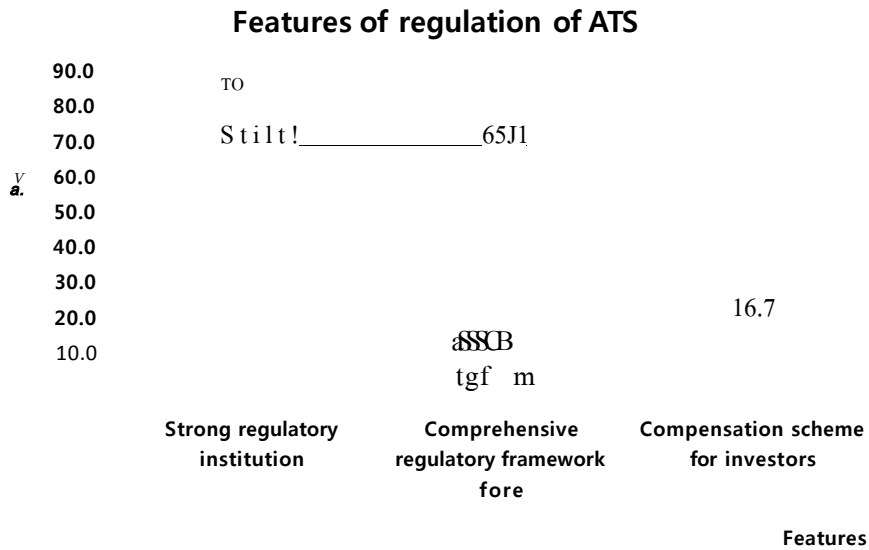


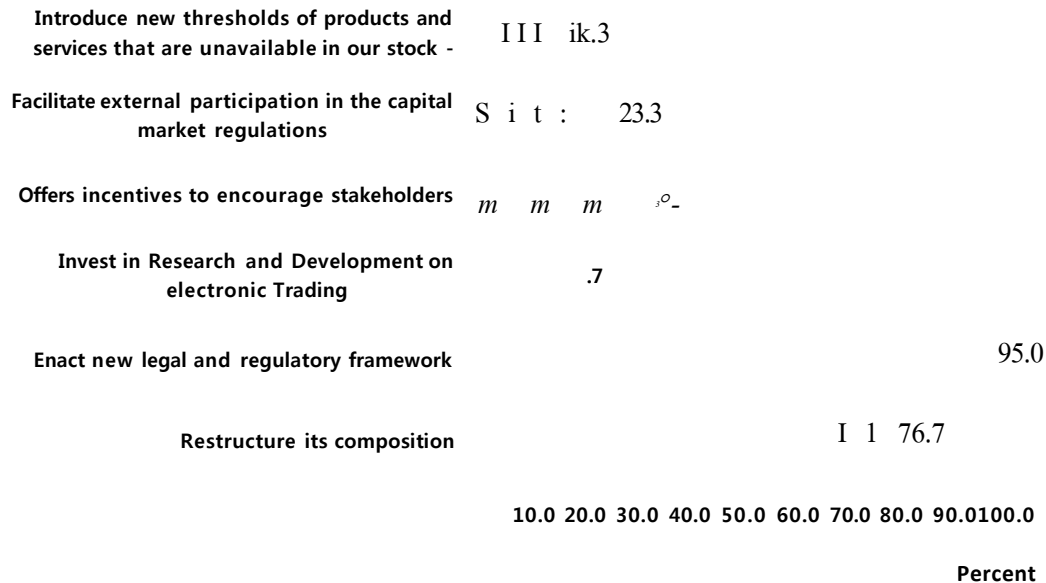
Table 4.20: Mechanisms to improve the role of the CMA

	Responses	Percent	Percent of Cases
	N		
Restructure its composition	46	30.7	76.7
Enact new legal and regulatory framework	57	38.0	95.0
Invest in Research and Development on electronic Trading	7	4.7	11.7
Offers incentives to encourage stakeholders	18	12.0	30.0
Facilitate external participation in the capital market regulations	14	9.3	23.3
Introduce new thresholds of products and services that are unavailable in our stock markets	8	5.3	13.3
	150	100.0	250.0

The researcher was also interested in knowing how CMA can improve on its role. Enacting new legal and regulatory was mentioned as the most important role (95%) while restructuring the NSE framework has 76% majority. On the other hand, investing in research and development on

electronic trading was the least mentioned with 11.7% majority while introducing new thresholds of products and services that are unavailable in the stock markets had 13.3%.

Mechanisms to improve the role of the CMA



4.4 Summary of Findings and Implications

On the length of time the respondents' organization has been in operation, Majority 46.7% of the organizations had operated for about 10 years, with the least (10.0%) being in operation for less than 3 years. This implies that the study was in a position to get reliable information on the need for regulatory framework in electronic trading since the firms have been in operation for a long time. Further, it implies that the respondents were in a position to give viable information on the measures required in the regulatory framework of electronic trading in Kenya

The section on general findings helped the research get the specific information on the need of a regulatory framework in electronic trading, as well as the risks associated with electronic trading and the respondents' suggestions of measures needed to minimize them during implementation

of the framework. This, also, included the respondents' opinion on the level of development of the Nairobi Stock Exchange, more information about the current status of regulation of the electronic trading and the respondents' rating of the Nairobi Stock Exchange Automated Trading System (ATS) Rules, together with the problems that have not been addressed by the ATS Rules. A percentage of 46.7% thought that electronic trading in the NSE is in the developed stage. The remaining percentage divides equally in their opinion that it is either in the advanced stage or in the underdeveloped stage. This may be interpreted to mean that electronic trading is present in the NSE but not many people are conversant with it. A percentage of 56.7% think that it is optimally regulated. The least 20.0% thought that it's under regulated. This implies that there is need for the stakeholders to review the regulations of electronic trading to assist smooth running of the businesses in the exchange market. A majority of 91.7% of the respondents felt that there is need to regulate the e-commerce while only 8.3% thought that there is no need. This implies that the stakeholders are ready for a review of the regulations. 56.7% suggested the self-regulation method. Only 6.7% preferred government regulation that is by capital markets only. This means that a hybrid method by the Government and the Nairobi Stock Exchange would be highly effective.

About 95% of the respondents felt that e-trading has introduced legal risks in the exchange market, while only 5.0% felt that it didn't. This implies that the electronic trading has its own disadvantages which need to be addressed accordingly. On whether the use of electronic trading systems has brought about technology risks in the NSE, a majority of 95% agrees while only 5% disagrees that the electronic trading has brought technology risks. This implies that there is need to put some measures in place to avoid the losses that may be incurred due to the technological risks. The electronic trading should be well regulated to minimize the operational risks; this is well shown by the respondents' opinion on the question on whether the use of electronic trading systems brought about operational risks in the NSE. About 56.7% recommended the enforcement of a new regulatory framework by the CMA, 3.3% felt that no measure is necessary. While 40.0% recommended the improvement of the existing framework by the CMA implying that a review of the existing regulatory framework and the adoption of new regulatory framework is important for progress. A majority of 96.1% are aware of the existence of the NSE Automated

Trading Systems (ATS) Rules, while 3.3% are not aware. About 40.0% of the respondents felt that the NSE ATS rules are very good while only 1.7% felt that they are poor. This implies that the ATS Rules have succeeded in minimizing the risks faced by the stake holders. However, **50.0%** of the respondents suggested that a new regulatory framework by the CMA be put in place. Only 3% said that no measure is necessary. This implies that there is great need for a new regulatory framework.

On how Kenya compares with other countries in relation to regulation of electronic trading 40.0% of the respondents think that it is doing well while only 5.0% thinks that it is doing poorly.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary and Conclusion

The objectives of this study were, first, to survey the need for a regulatory framework on electronic trading in Kenya and to highlight measures that need to be taken to minimize risks associated with electronic trading in the Nairobi Stock Exchange.

The involved analysis of primary data derived from responses from questionnaires administered on 60 stakeholders of the Nairobi Stock Exchange. A stratified random sampling technique was used to select the right representatives from the stakeholders of NSE excluding investors. The representatives selected as respondents were senior managers of the stakeholder firms and mainly serving in legal, reporting and/or compliance departments in their respective firms. The analysis of the data was undertaken using descriptive statistics with the help of the Statistical Package for Social Sciences (SPSS) and Factor Analysis. Tables and graphs were used extensively for data presentation to paint a clear picture of the shape of the distribution of data and general impression of values that could be seen as common or average.

The research concludes that there is extreme need for a new regulatory framework on electronic trading in Kenya. Further, the study concludes that there is need to implement measures to minimize risks associated with electronic trading in the Nairobi Stock Exchange. In essence, the study finds that there is need for a new regulatory framework for electronic trading in Kenya in order to hedge technology, operational, legal and political risks in the Nairobi Stock Exchange.

5.2 Policy Recommendations

There is consensus that certainty of regulations is good for business especially in such sensitive financial industry as electronic trading (electronic commerce). At the very least, certainty

increases investors confidence in the regulatory framework and facilitates their protection against risks hence providing confidence to the stakeholders.

Therefore, we recommend that the Board of Directors of the Nairobi Stock Exchange and Capital Markets Authority in concert with the Government Institutions charged with spearheading legal reforms take steps to enact a regulatory- framework for regulation of electronic trading in the NSE as soon as possible. Such regulatory framework must incorporate the findings in this study and, in particular, it should utilize both self regulation by the NSE and Government regulation by the CMA. Further, the regulatory framework should try and borrow the best practices on electronic trading from the various jurisdictions discussed in this study to foster efficiency.

The Government should help the NSE in forging international relations so that the electronic market can venture and grow faster into the international financial markets.

5.3 Limitations of the Study

The study was limited in that questionnaires are standardized so was not possible to explain any points in the questions that participants might misinterpret.

The study also involved a number of generalizations which were presented in the form of multiple questions in the questions. As such, it was not possible for the study to arrive at specific findings on many of the matters sought to be studied.

Time constraint was also a limitation as the time used for the study had to be shared between the time required for work and socialization.

5.4 Suggestion for Further Study

This study sought to survey the adequacy of the polity, legal and regulatory framework for electronic trading in the Nairobi Stock Exchange (NSE) in hedging risks and challenges posed by

electronic trading technology. The researcher recommends further study to investigate how the current mutual ownership affects performance and regulation of electronic trading in the NSE and the need to demutualize the NSE.

**A SURVEY OF THE NEED FOR A REGULATORY FRAMEWORK ON
ELECTRONIC TRADING IN THE NAIROBI STOCK EXCHANGE**

QUESTIONNAIRE

Please answer the following questions by placing a tick () in the space provided and/or giving details as may be requested. If in any question the alternatives provided are not exhaustive, provide your response under 'others'.

The questionnaire would appropriately be completed by the head of finance/legal/regulatory/compliance department in the respective organization (or any other persons managing in the department).

Designation of the Respondent:

SECTION A

1. Name of the Organization/Firm (Optional):
2. How long has your organization been in operation?

Less than 3 Years	Less than 5 Years	Less than 9 years	More than 10 Years

3. Is your firm, in your view, a key stakeholder in the Nairobi Stock Exchange?
 - (a) Yes { }
 - (b) No { }
 - (c) Other { }
4. If yes, specify

SECTION B

5. In your opinion, what is the stage of development of electronic trading in the Nairobi Stock Exchange?
 - (a) Advanced Stage { }
 - (b) Developed Stage { }

(c) Underdeveloped Stage { }

(d) Others { } specify

6. What would you say is the current status of regulation of electronic trading in Nairobi Stock Exchange?

(a) Over-regulated

(b) Optimally regulated

(c) Under-regulated

(d) Others (specify)

7. Do you think there is need to regulate electronic trading (e-commerce) in the Nairobi Stock Exchange?

(a) Yes { }

(b) No { }

(c) Other { } Specify

8. If yes, which method do you prefer for regulation of electronic trading in die Nairobi Stock Exchange?

(a) Governmental Regulation {By Capital Markets Authority Only}

(b) Self-Regulation {Nairobi Stock Exchange Only}

(c) Hybrid of Government and Self-Regulation

(d) Others (Specify)

9. In your opinion, has the use of electronic trading systems brought about legal risks in the Nairobi Stock Exchange?

(a) Yes { }

(b) No { }

(c) Other (specify)

10. In your opinion, has the use of electronic trading systems brought about technology risks in the Nairobi Stock Exchange?

(a) Yes { }

(b) No { }

(c) Other (specify)

11. In your opinion, has the use of electronic trading systems brought about operational risks in the Nairobi Stock Exchange?

(a) Yes { }

(b) No { }

(c) Other (specify)

12. In your opinion, has the use of electronic trading systems brought about political risks in the Nairobi Stock Exchange?

(a) Yes { }

(b) No { }

(c) Other (specify)

13. What regulatory measures would you recommend to help hedge the technology, legal, operational and political risks brought about by electronic trading in the Nairobi Stock Exchange?

(a) Enforcement of a new regulatory framework by the CMA. { }

(b) Improvement of the existing framework on regulation of existing framework. { }

(c) No measure is necessary. { }

(d) No idea { }

14. Are you aware of existence of Nairobi Stock Exchange Automated Trading System (ATS) Rules?

(a) Yes { }

(b) No { }

(c) Other (specify)

15. From your experience, in a six scale option, how would you rate the Nairobi Stock Exchange Automated Trading System (ATS) Rules as a mechanism of regulating electronic trading in Kenya?

(a) Excellent

(b) Very Good

(c) Good

(d) Fair

(e) Poor

(0 Other (specify)

16. What regulatory problem(s) do you think the Automated Trading System Rules have not addressed in your experience as a stakeholder in the Nairobi Stock Exchange?

(a) Failure to execute client orders. { }

(b) Execution of unauthorized transactions { }

(c) Delay of IPO refunds { }

(d) Forgery { }

(e) Churning { }

(g) Other { } (specify)

17. How do you think the problem(s) specified in question (20) above ought to be addressed?

a) Enforcement of a new regulatory framework by the CMA. { }

b) Improvement of the existing framework on regulation of existing framework. { }

c) No measure is necessary. { }

d) No idea { }

18. Are you aware of the existence and content of regulation of electronic trading in any of the following countries?

(a) United States of America { }

(b) Republic of South Africa { }

(c) **United Kingdom** { }

(h) **Other** {} (specify)

19. What features of regulation of electronic trading in any or all the above countries do you recommend to Kenya and why?

(a) Strong regulatory institution { }

(b) Comprehensive regulatory framework for electronic trading { }

(c) Compensation scheme for investors { }

(d) Other {} (specify)

20. In your opinion, how does Kenya compare with any or all the three (3) countries above in relation to regulation of electronic trading?

a. Excellent

b. Very Good

c. Good

d. Fair

e. Poor

f. Other (specify)

21. How would you rate the performance of Capital Markets Authority in this role in the past 3 years?

a. Excellent

b. Very Good

c. Good

d. Fair

e. Poor

f. Other (specify)

22. How do you think the Capital Markets Authority can improve on this role?

(a) Restructure its composition { }

(b) Enact new legal and regulatory framework { }

- (c) Invest in Research and Development on electronic trading { }
- (d) Offers incentives to encourage stakeholders { }
- (e) Facilitate external participation in the capital markets regulation { }
- (f) Introduce new thresholds of products and services that are unavailable in our stock markets { }
- (g) Other { } (specify)

23. Do you think this role has a bearing on technology, legal, operational and political risks in the Nairobi Stock Exchange?

- (a) Yes { }
- (b) No { }
- (d) Other (specify)

24. In your opinion, how would you rate the performance of the Nairobi Stock Exchange as a self-regulator?

- a. Excellent
- b. Very Good
- c. Good
- d. Fair
- e. Poor
- f. Other (specify)

25. Do you have any other suggestion you have on how to hedge technology, legal, operational and political risks not addressed above?

- a. Yes { }
- b. No { }
- c. Other { }

Specify

Thank you for your co-operation

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