



THE Nigerian STOCK EXCHANGE

UNDERSTANDING MARKET DATA FOR SAVVY INVESTING AND WEALTH CREATION

Exploiting Market Data for Smart Investment Decisions

Presented by

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18 October, 2016



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- Watch This Space: The Future of Market Data (... and Trading)

What is Market Data?

What is Market Data?

Market Data is the numerical price data, reported from trading activities, which takes place on an Exchange. Market data enables traders and investors to gather as much information as possible about daily trading activities on the Exchange.

Transaction Processing
*Volume, Value, Price, No. of
Deals, etc.*

Market data is the bi-product of the transaction processing of an Exchange. Also popularly known as market statistics; it includes data parameters such as volume, value, price, number of deals, etc.



Market Data

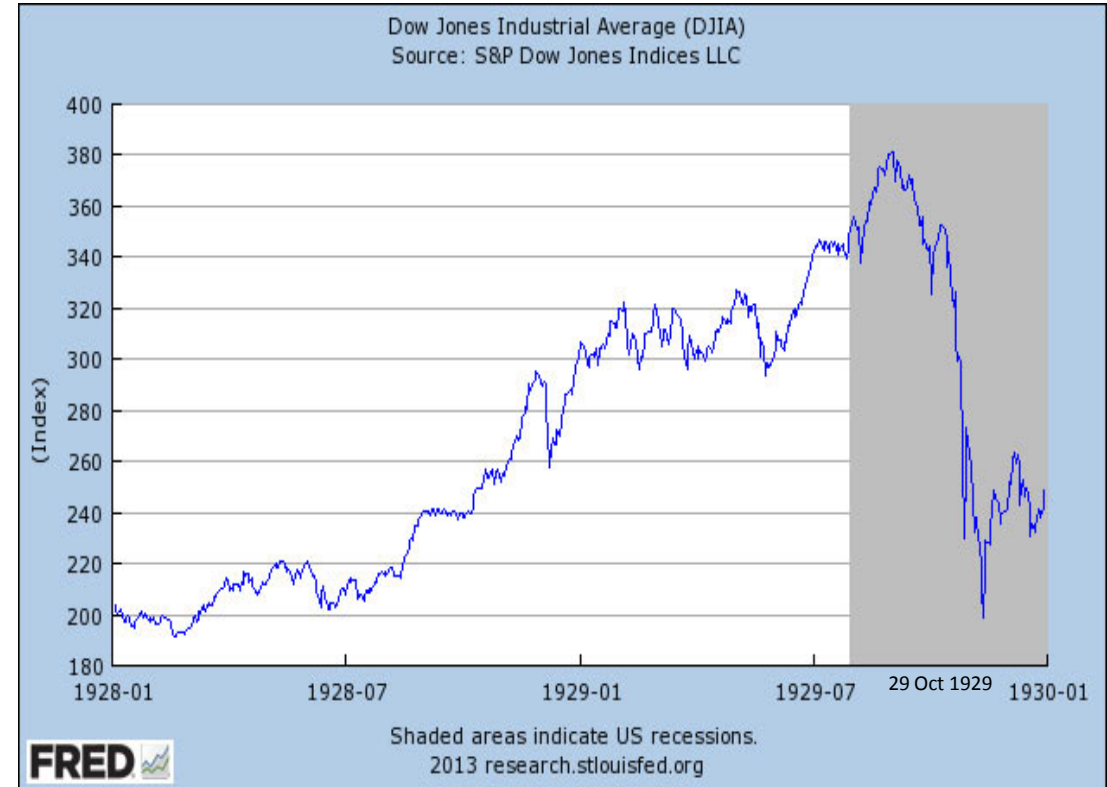
- **Real-time Data:** *(Delay of less than 15 minutes from creation)*
- **Delayed Data:** *(Real-time information delivered timely at intervals)*
- **Reference Data:** *(Used to complete financial transactions and settle those transactions.)*

Spot the Difference



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....Or Similarity

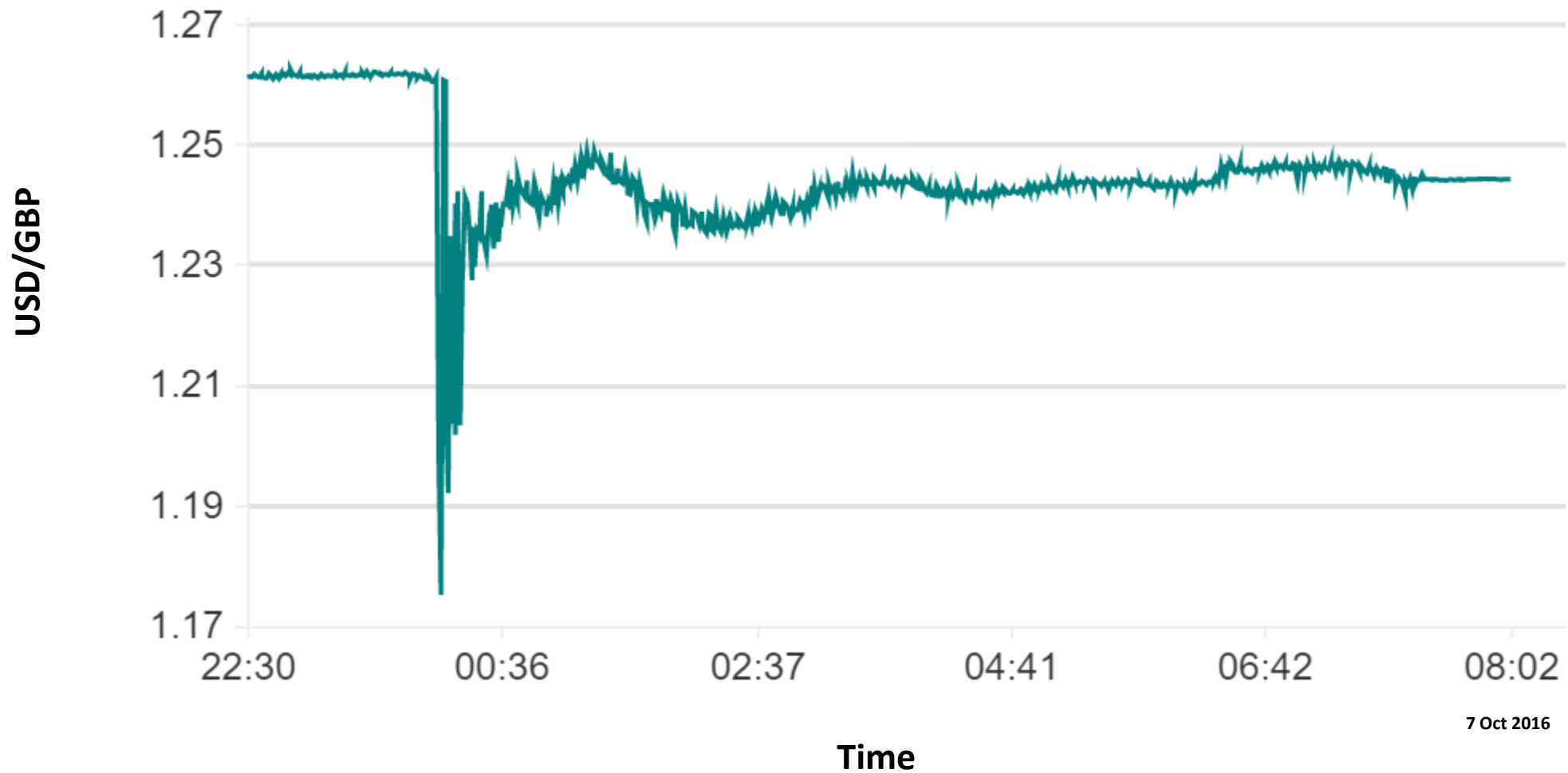


2016 Flash in the Market



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Pound Flash



7 Oct 2016

Why is Market Data Important?



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1 Premium Price Differentials

Costs More in Shanghai

An index of the average price difference between the mainland and Hong Kong shares of companies listed in both markets. Over 100 indicates a premium for mainland shares.



Source: FactSet

THE WALL STREET JOURNAL.

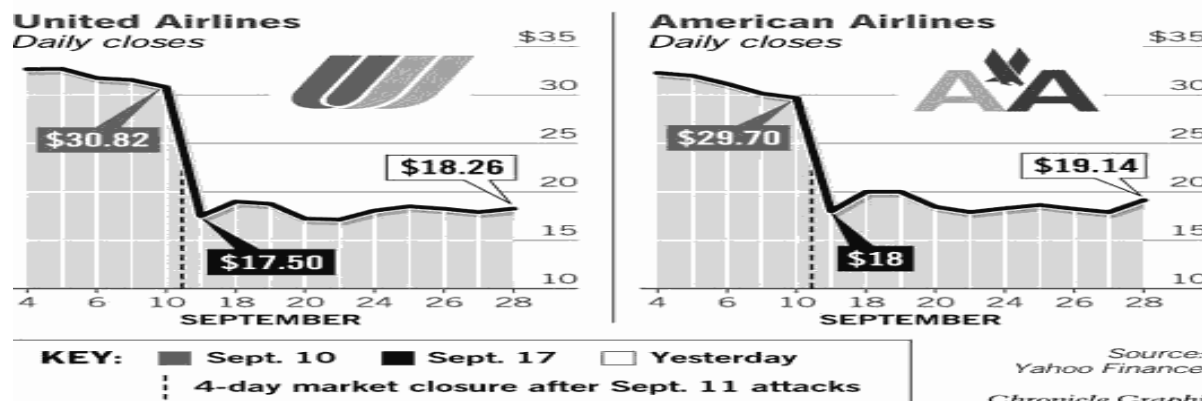
2 FT100 Rising (2015)




3 Market Data Enables you to Profit Even in a Down Cycle

Profiting from a loss

The stocks of United and American airlines fell sharply following the Sept. 11 terrorist attacks, which used hijacked jets from the two airlines. But unknown investors made a bundle using a financial derivative that increases in value when a stock goes down.



**... of Arbitrageurs, Investors,
Speculators, Hedging, Economic
Trending and Regulators.....**



“ If you are shopping for common stocks, choose them the way you would buy groceries, not the way you would buy perfume.” ”

Benjamin Graham

British-born American professional investor
1894-1976

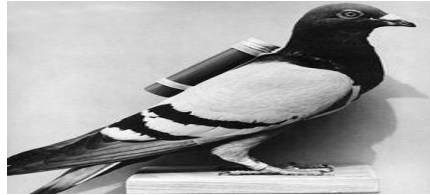
The Genesis of Market Data



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Moving with the Times – History of Stock Markets

- In 1602, the Dutch East India Company officially became the world's first publically traded company when it released shares on the Amsterdam Stock Exchange.



11th Century

- Dates back to the 1500s when the first LLC was formed. It is generally accepted that Antwerp had the world's first stock market system (without stocks).



20th Century Trading



19th Century Trading

- The LSE was officially formed in 1801 and was the main stock market for Europe, while the NYSE was the main Exchange for America.



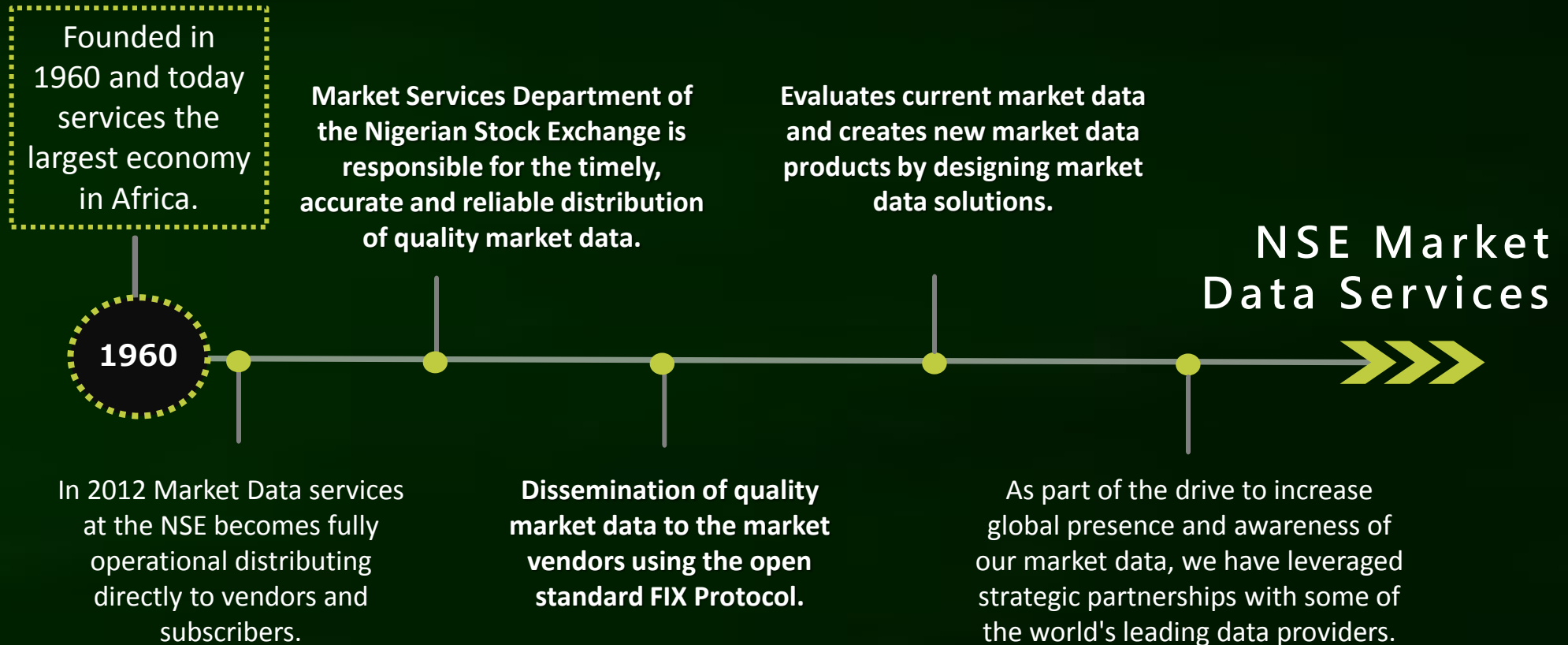
21st Century Tech Evolution

- Today, virtually every country in the world has its own stock market. Major stock markets typically emerged in the 19th and 20th centuries.



Next Generation Trading

Market Data at The NSE



Key Market Drivers for Market Data



One promise of **Market Data** is that companies who get good at collecting, analyzing, and maximizing the value derived from Transactions, Interactions, and Observations will put themselves in the best position to be highly profitable

Market Data

- Research and Analytical Requirements
- Wealth Creation
- Stock Performance
- Compliance and Risk Requirements
- Regulatory Requirements

Organizations using **data and analytics** show productivity rates and profitability improvements that are **5-6%** higher than those of their peers.

Access to Transactional Data

Low Latency Data Access

Access to Predictive/Descriptive Data using Power BI

A circular network graph visualization. It features a dense web of small, semi-transparent nodes. Most nodes are yellow, but there are several clusters of red nodes, particularly in the lower-left and central areas. The nodes are interconnected by a complex, dense network of thin, green lines, creating a textured, almost fibrous appearance. The entire graph is contained within a circular boundary against a dark background.

**Market Data connects all the
dots in successful investment
strategies**

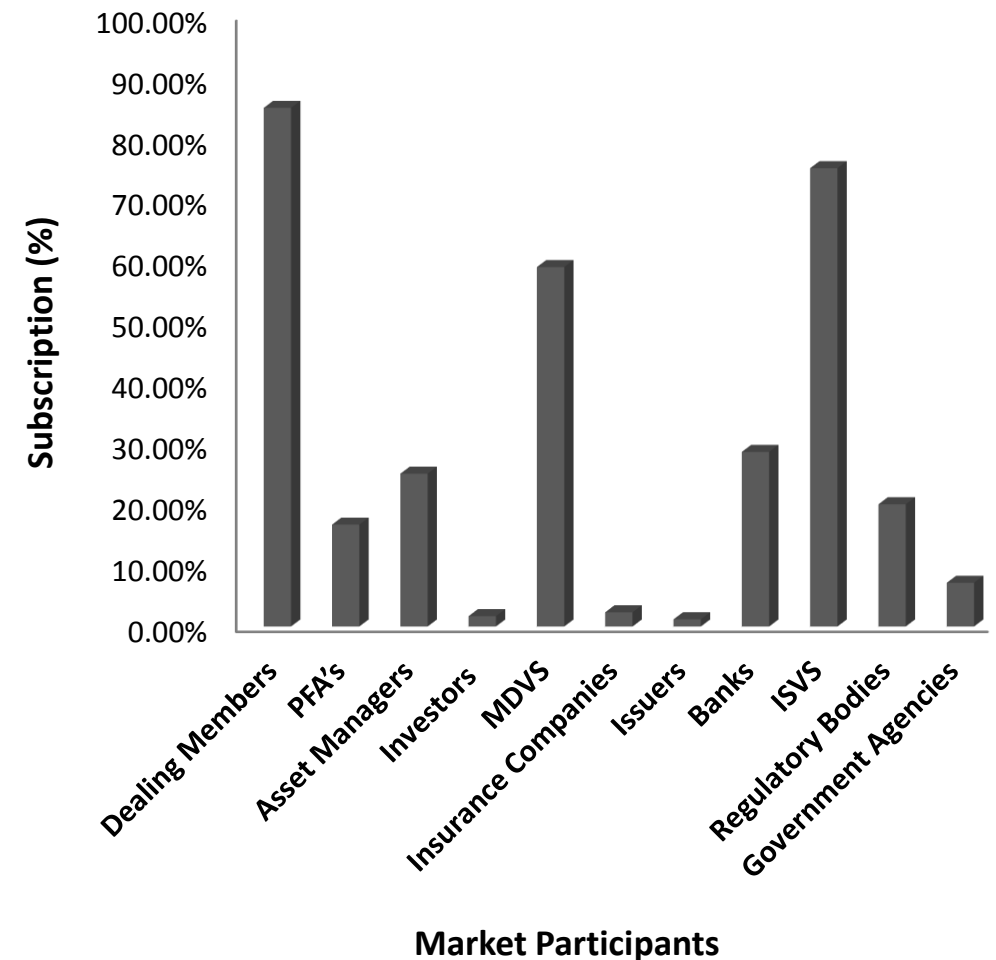
Market Data in Nigeria



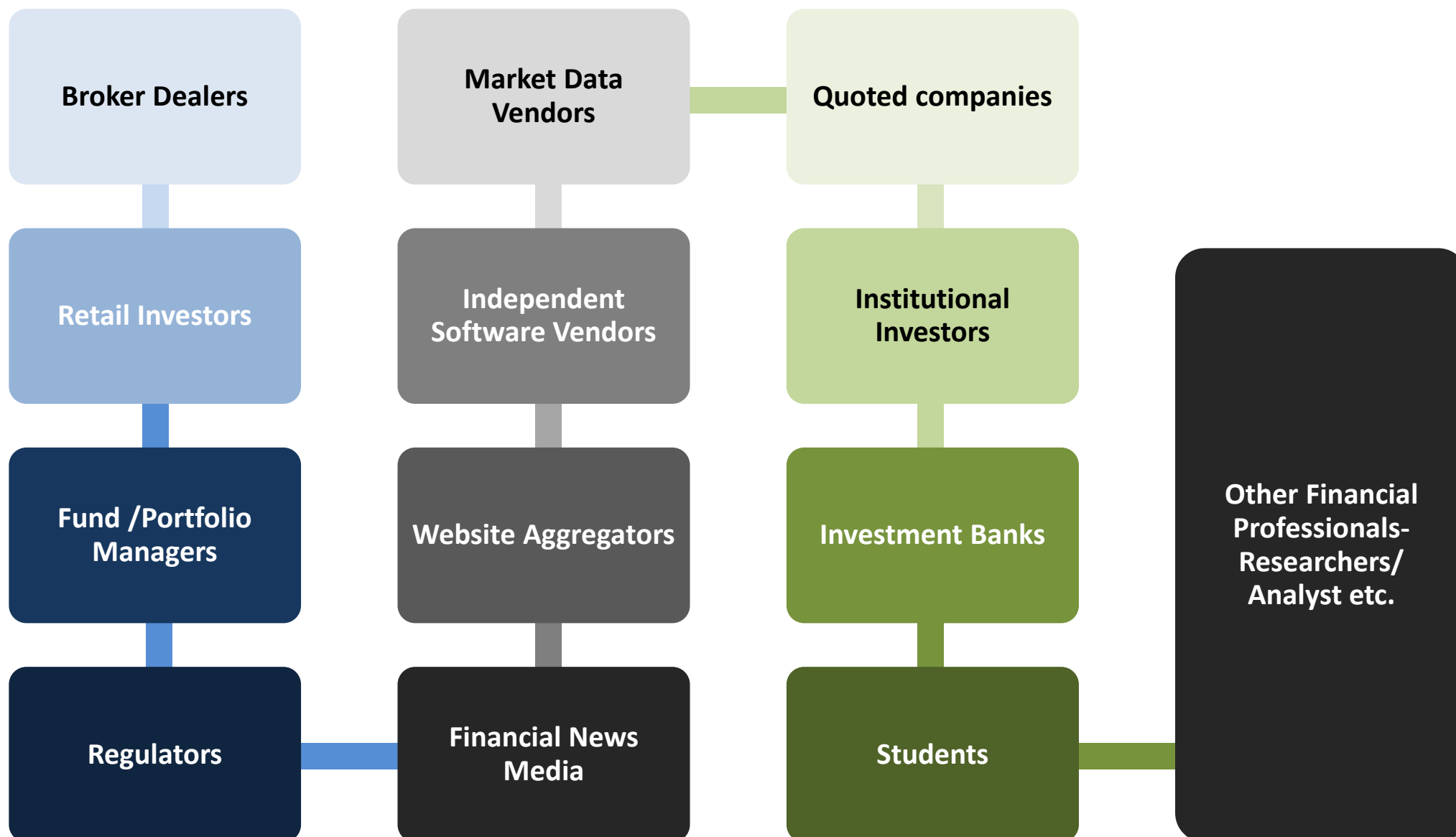
2016 Market Data Subscription in Nigeria

Market Participants	Registered Number	Utilization	Subscription
Broker-Dealer Firms	205	174	Excellent
PFA's	24	4	Poor
Asset Managers	48	12	Fair
Investors	5.9million	100,000	Poor
Market Data Vendors	17	10	Good
Insurance Companies	43	1	Poor
Listed Companies	171	2	Poor
Banks	21	6	Fair
Independent Software Vendors	20	15	Good
Regulatory Bodies	10	02	Poor
Government Agencies	N/A	2	Poor

Subscription to NSE Market Data



Users of Market Data Products



Existing Market Data Products from NSE



Product	Price (N) Local	Price (\$) Int.	Billing Frequency	Product Description
TV EOD Display	N148,800	\$960	Annually in Advance	<ul style="list-style-type: none"> Client is permitted to display certain End of Day fields on a television station
NSE Trading Statistics				
Real time Data for Order Routing	N400,000	-	Annually in Advance	<ul style="list-style-type: none"> Raw data feeds provided to Authorized Clients, directly from the trading platform via connection ports for non-display use (Order Routing) only.
Real time Data for ETF Computation	N400,000	-	Annually in Advance	<ul style="list-style-type: none"> Raw data feeds provided to Authorized Clients, directly from the trading platform via connection ports for non-display use (Computation of ETF Prices) only.
Delayed Feed for Vendor Distribution	N1,000,000	\$20,000	Annually in Advance	<ul style="list-style-type: none"> Delayed Feeds are delivered on timely intervals of Fifteen minutes or more. Delayed feeds are received via authorized Network Service Providers and Market Data Vendors who receive data directly from the Exchange.

Existing Market Data Products from NSE



Product	Price (N) Local	Price (\$) Int.	Billing Frequency	Product Description
Data Portal Products				
Trading floor Level 1	N50,000	-	Annually in Advance	<ul style="list-style-type: none"> Access to Real Time Full depth of Order Book, Bid/Offer, Day Traded Volume, Average Price, High Price and Low Price.
Trading floor Level 2	N70,000	-	Annually in Advance	<ul style="list-style-type: none"> Access to Real Time Counterparty Information.
Equity Level 1 Real Time	N35,000	-	Annually in Advance	<ul style="list-style-type: none"> Access to Real Time Price, Volume and Value Data
Equity Level 1 Historical	N45,000	-	Annually in Advance	<ul style="list-style-type: none"> Query Engine for generation of Historical Open Price, High Price, EOD Price, Number of Trades, Volume and Value Data
Equity Level 2 Real Time	N45,000	-	Annually in Advance	<ul style="list-style-type: none"> Access to Real Time Price data (current price, high price, low price, upper circuit price, lower circuit price), Volume and Value Data, Market Capitalization, Open Orders. Access to Real Time Stock YTD performance Access to Real Time Top 10 Volume and Value Stocks
Equity Level 2 Historical	N55,000	-	One-off payment	<ul style="list-style-type: none"> Query engine for generation of Historical Traded Volume and Value, Number of Trades, Open Price, High Price, VWAP, Number of days Traded, Market Capitalization.
Customized Reports	N120,000	\$600	Annually in Advance	<ul style="list-style-type: none"> Monthly End of Day reports are customized to fit the data needs of the client. This is provided to clients upon request e.g. Top Traded Stocks by Broker Dealer.



NSE Trading Statistics and Data Portal

- NSE website provides free access to delayed trading statistics covering all asset classes. In addition to searchable market activities and company data; periodic reference report dumps can be downloaded from the portal. Visit www.nse.com.ng/market-data for more information.

The screenshot displays the NSE website interface. At the top, a navigation bar includes links for Market Data, Products, Issuers, Dealing Members, Regulation, Investing, Media Centre, and About Us. The Market Data link is highlighted with a red dashed circle. Below the navigation bar, the market status is shown as 'CLOSED'. A row of stock tickers follows, including ABBEYBDS, ABCTTRANS, ACADEMY, ACCESS, and AFR1. The main content area features a line chart for the All Share Index, showing a peak around 2008 and a subsequent decline. To the right of the chart is a yellow banner for the '2016 NSE ESSAY COMPETITION' with the topic: 'WHAT IS THE BIGGEST OBSTACLE TO SAVING AND INVESTING MONEY AND HOW CAN THE NIGERIAN STOCK EXCHANGE HELP?'. Below the banner is a table titled 'Market Activity' showing data for Equities, Bond, and ETFs. The Equities section includes a table with columns for Advancers, Decliners, and Top Trades. The Bond section shows a table with columns for AsSnapshot, DEALS, VOLUME, VALUE, and CAP. The ETFs section shows a table with columns for AsSnapshot, DEALS, VOLUME, VALUE, and CAP. At the bottom right, there is a section for 'UPCOMING EVENTS?' and 'CONNECT WITH US' with social media links for Facebook, Twitter, YouTube, and LinkedIn.

Market Activity

Asset Class	Advancers	Decliners	Top Trades
Equities	AsSnapshot: 27,835.22		
Bond	DEALS: 3,048.00		
	VOLUME: 200,842,247.00		
	VALUE: 921,565,490.93		
ETFs	CAP: 9,560,851,002,836.69		

UPCOMING EVENTS?
Click here

CONNECT WITH US
Join our community

Facebook, Twitter, YouTube, LinkedIn

+2347002255673
contactcenter@nse.com.ng



DataXplorer Reports Notification

NSE Reports Notification

NEW

Subscribe to NSE report notification service to receive desired periodic reports (e.g. daily, week and monthly) right in your inbox. Reports can be conveniently archived and viewed later even without internet connection.



Daily Market Summary as of 23/09/2016 Printed 23/09/2016 14:44:14.014

	22-Sep-16	23-Sep-16	Daily % Δ
Equities			
ASI	28,166.42	28,247.07	0.29
Market Cap(M)	9,675,323,536.374.10	9,703,028,097,139.01	-24.96
Deals	4,179	265,074,604	-35.36
Volume	410,101,879	1,558,962,838.81	-56.91
Value(M)	3,620,076,090.79	1,558,962,838.81	
Market Cap			
Premium Board	3,672,522,612,796.54	3,702,944,273,648.95	0.83
Main Board	6,002,800,923,622.17	6,000,083,823,534.72	-0.05
ASeM	8,443,180,448.50	8,443,180,448.50	0.00
Bonds	6,069,828,863,112.26	6,069,828,863,112.26	0.00
ETF's	4,191,983,282.18	4,249,755,282.18	1.38
Aggregate	16,357,787,583,261.65	16,385,549,916,826.61	0.17
NSE Indices			
NSE Premium Index	1,754.90	1,709.44	-2.56
NSE Main Board Index	1,271.44	1,270.86	-0.05
NSE ASeM INDEX	1,213.68	1,213.68	0.00
NSE All-Share Index	28,166.42	28,247.07	0.29

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Top 3 Quantity Traded by Industry



Top 5 Trades by Turnover Volume

Symbol	Industry	Deals	Volume
FCMB	FINANCIAL SERVICES	186	98,794,783

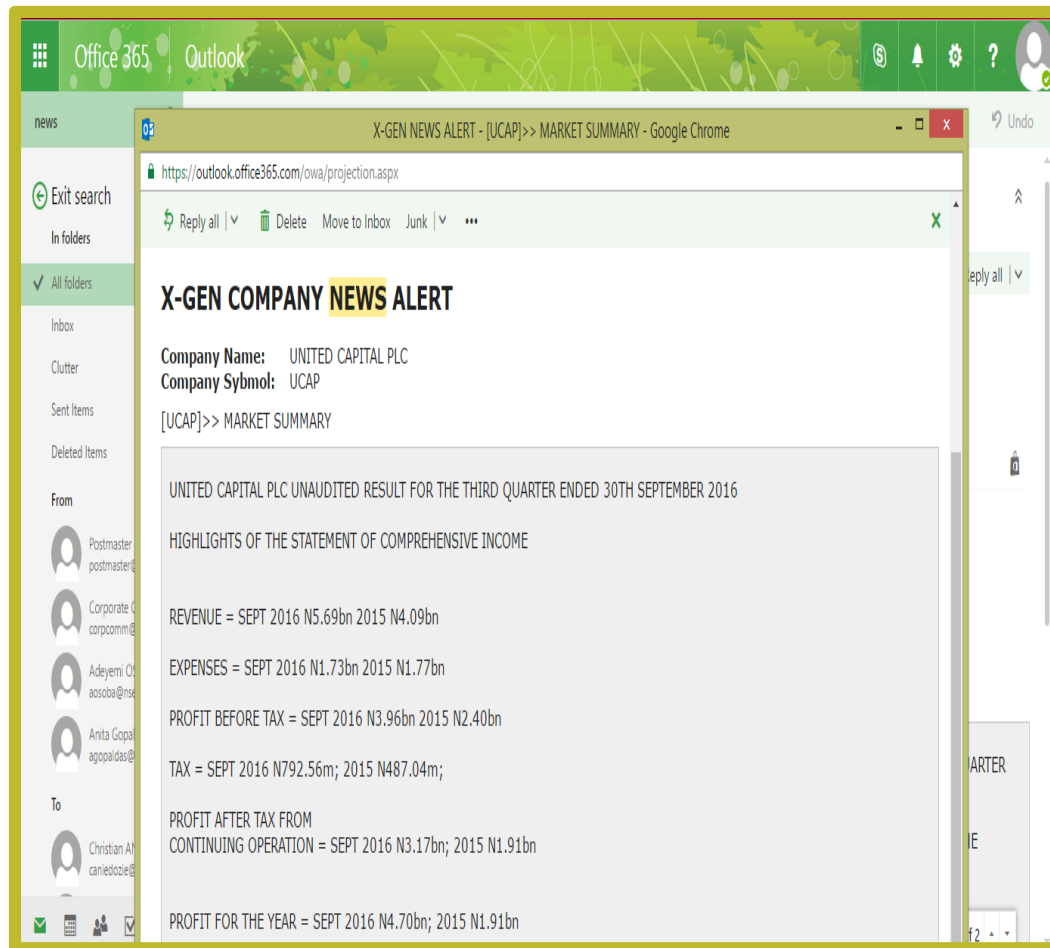


XGEN News Alert

XGEN News Alert

NEW

Be the first to receive company news alert, at the same time with the Broker-Dealer community by subscribing to XGEN News Alert. Relevant trading engine company news will be delivered to your mail box in real-time. Contact the Market services department on marketdata@nse.com.ng for more information.



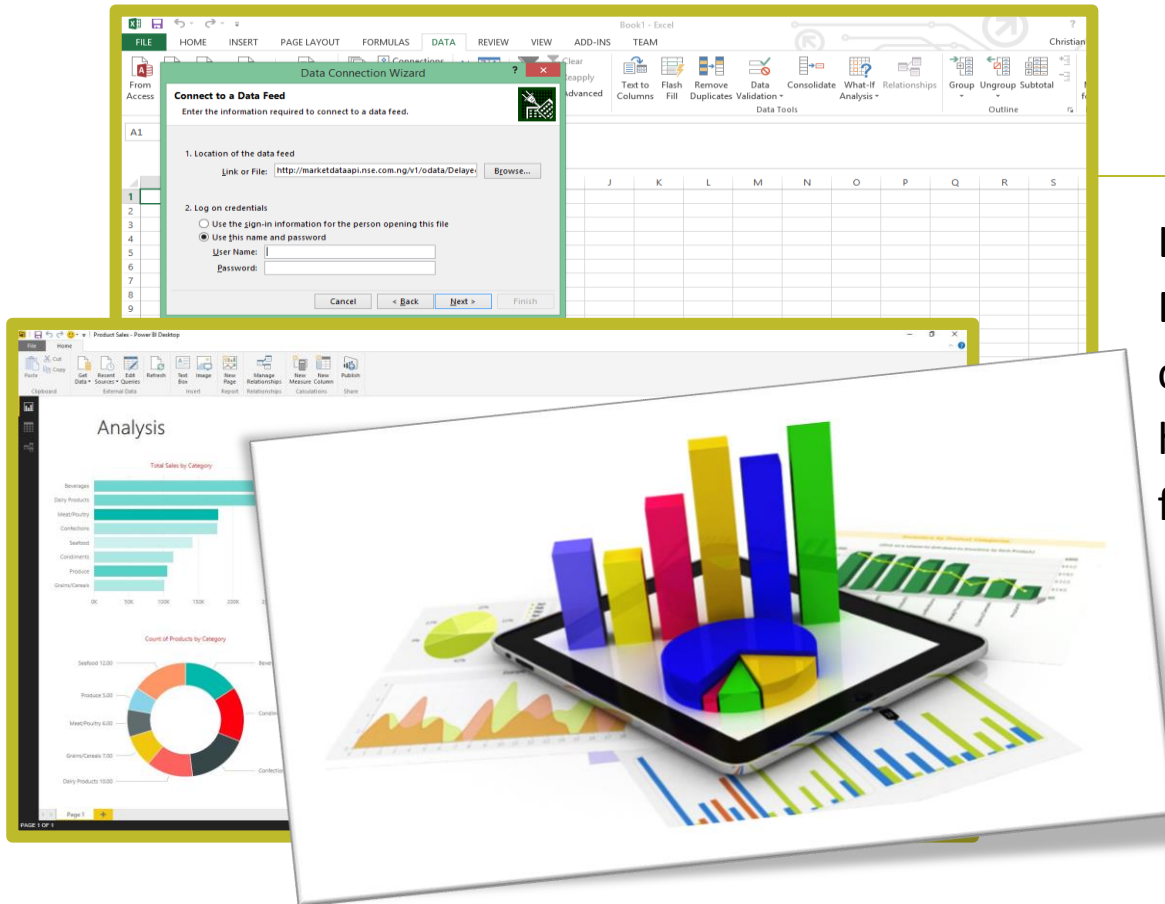


NSE Odata Feed

NSE Odata Feed

NEW

Log on to NSE Odata feed right from Microsoft Excel or Power BI to get NSE Market data and create any desired insight using tools your in-house market data analyst and research team are familiar with.



Market Data Products



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Issuer Share Price

Share Price
[NGN] 145.50

Current as of 2016-02-14 13:15:27 (WAT)

Issuer Share Price

NEW

Display your share price on your corporate website in real time.

WORLDWIDE

Search here...

ABOUT US OPERATIONS INVESTOR RELATIONS MEDIA SUSTAINABILITY CAREERS

Passionately building a world-class company

Our operations are focused on enriching the lives of Africans

Latest News

- Commissioning of the 24km Itori-Ibese Concrete Road in Ogun State - 3rd June, 2016
- Dangote Launches \$1Billion Cement Investments in Edo. Inaugurates 6M MTPA Cement Plant in Okpella
- Zambian President, Osinbajo, Oshiomhole, Laud Dangote on Zambia Cement Plant

Share Price [NGN] 192

As of 2016-06-30T14:28:09.357 WAT

Q1 Dangote Cement Q1 2016 Result

www.dangotecement.com

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Ticker/Display Data

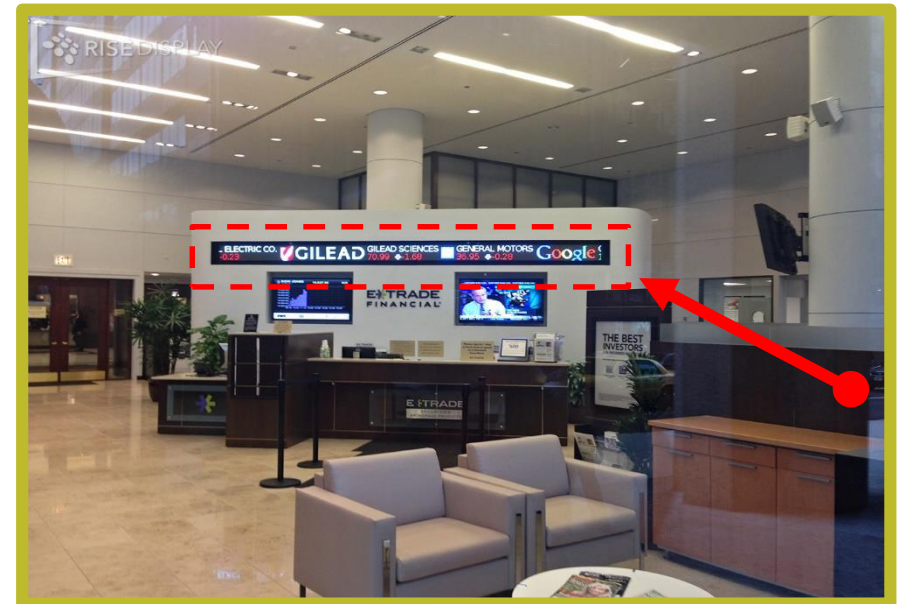
Ticker/Display Data

NEW

Display your share price in your corporate offices as part of your Brand and Investor Relations Strategy.



Lounge/Reception at BP



Reception at E-Trade Financial

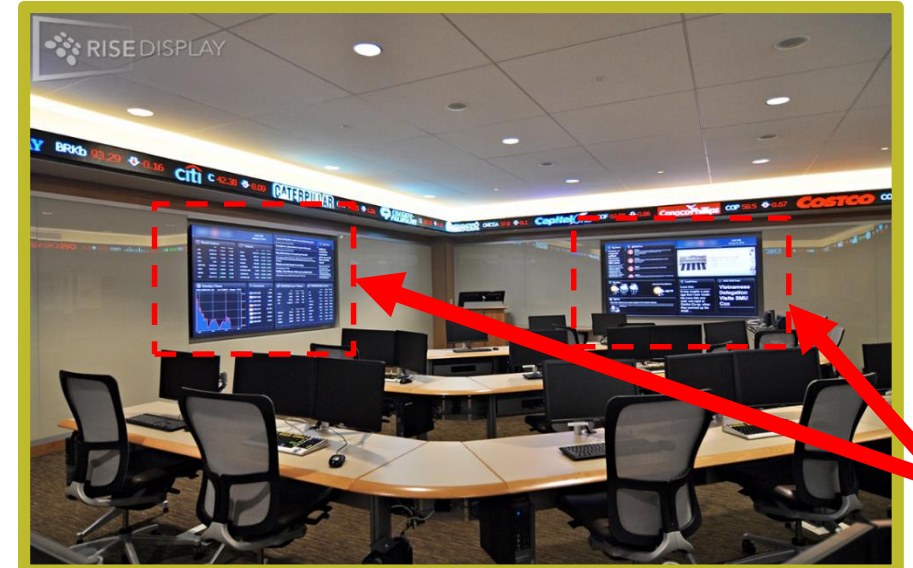
Note: Charges are only on the data, however the Nigerian Stock Exchange has a partnership with Samsung Nigeria, and can provide you with the screens. Contact marketdata@nse.com.ng for more information.

Video walls



Video wall

Display real time market data alongside economic indicators on a robust visual display unit. Ideal for trading rooms, financial departments and corporate talent management facilities.



Note: Charges are only on the data, however the Nigerian Stock Exchange has a partnership with Samsung Nigeria, and can provide you with the screens. Contact marketdata@nse.com.ng for more information.

New Market Data Products from NSE...1/3



Product	Price (N) Local	Price (\$) Int.	Billing Frequency	Product Description
Issuer-Share Price Information (Real Time)	N310,000	\$2,000	Annually in Advance	<ul style="list-style-type: none"> Allows a company listed on the NSE to display Stock Quote: symbol, previous close, previous close date, change, percent change, open, high, low, close, volume, currency, market date and time, UTC offset, 52 week high/low, Trade Date and Last Trade Time on it's own website on a near Real time basis.
Issuer-Share Price Information (Delayed)	N196,000	\$1,000	Annually in Advance	<ul style="list-style-type: none"> Allows a company listed on the NSE to display Stock Quote: symbol, previous close, previous close date, change, percent change, open, high, low, close, volume, currency, market date and time, UTC offset, 52 week high/low, Trade Date and Last Trade Time on it's own website on a delayed basis of 15minutes.
Issuer-Share Price Information (End of Day)	N165,000	\$750	Annually in Advance	<ul style="list-style-type: none"> Allows a company listed on the NSE to display Stock Quote: symbol, previous close, previous close date, change, percent change, open, high, low, close, 52 week high/low on it's own website at the close of each trading day.
X-Gen News	N120,000	\$1,200	Annually in Advance	<ul style="list-style-type: none"> Company disclosures from listed companies are sent directly to clients by e-mail as they are disseminated on the trading terminal.

New Market Data Products from NSE...2/3

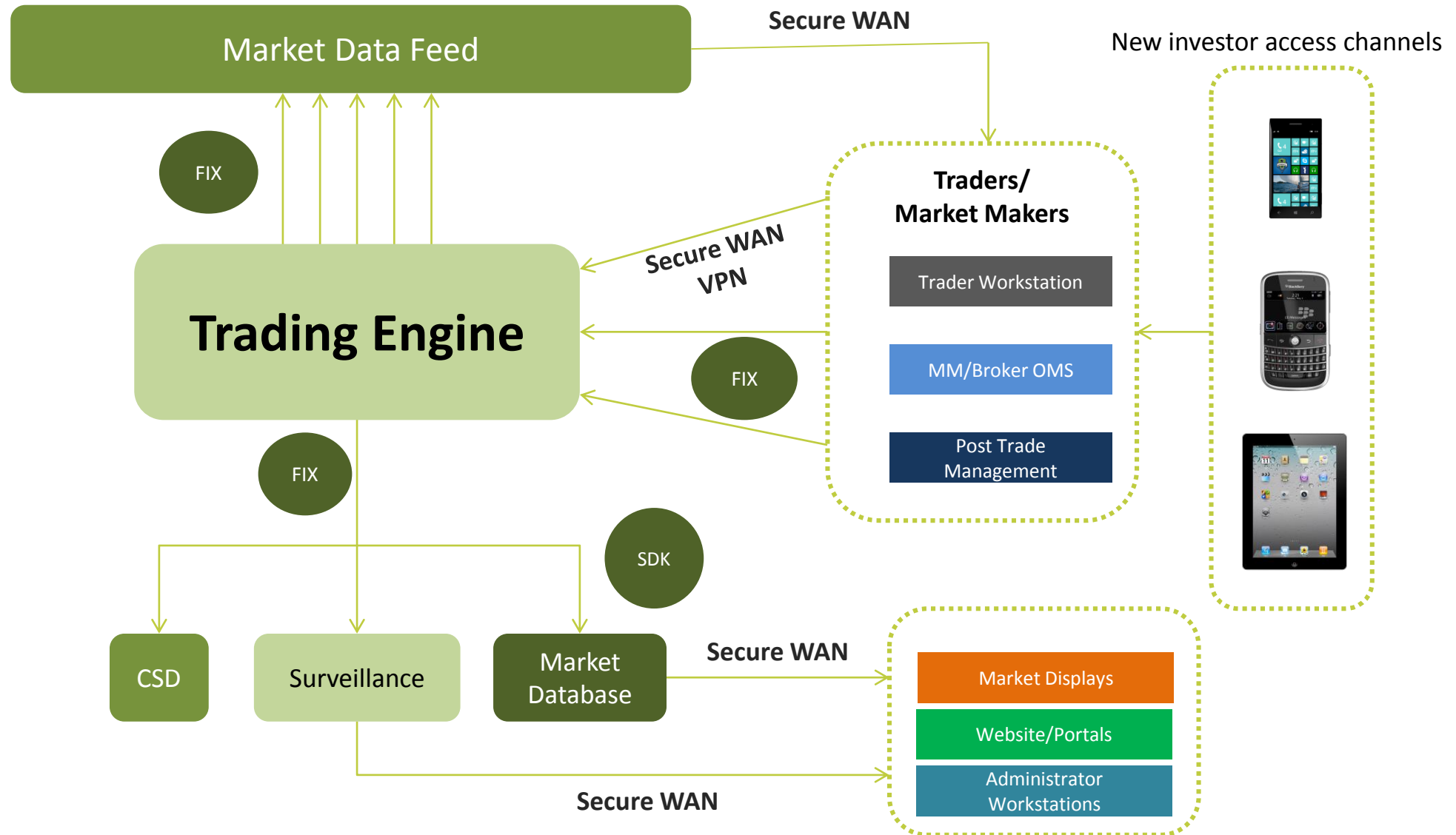
Product	Price (N) Local	Price (\$) Int.	Billing Frequency	Product Description
NSE Reports Notification	N357,000	-	Annually in Advance	• (subset of NSE Market Data API)
NSE Odata Feed	N714,000	-	Annually in Advance	• (subset of NSE Market Data API)
Ticker/Display Data	N192,000	\$1,750	Annually in Advance	• (Web Ticker License)

New Market Data Products from NSE...3/3



Product	Price (N) Local	Price (\$) Int.	Billing Frequency	Product Description
Video Wall			Annually in Advance	<ul style="list-style-type: none"> Charges are only on the data, contact marketdata@nse.com.ng for more information.
Trade Smart (FIX Data Feed)	N1,200,000	\$25,000	Annually in Advance	<ul style="list-style-type: none"> Raw data feeds provided to Authorized Clients, directly from the trading platform. Authorized Clients get connected to the trading platform via connection ports provided by the NSE, allowing all raw data generated during a trading day pass through to these clients on a real time basis. This service is made available to all major data distributors i.e. data vendors etc.
Market Data API Products				
API Standard Subscription Band 2	N357,000	-	Annually in Advance	<ul style="list-style-type: none"> Maximum number of 19,200 hits per month on all API products with direct connection to the Exchange.
API Premium Subscription Band 3	N714,000	-	Annually in Advance	<ul style="list-style-type: none"> Maximum number of 76,800 hits per month on all API products with direct connection to the Exchange.

Behind the Market Data Generator





NSE Market Data API and Widgets

API and Widgets

Subscribe to NSE data API to integrate market data to your web and back office solutions using simple and cost effective data interface. Contact marketdata@nse.com.ng for more information.

The Market Services department of the Nigerian Stock Exchange is delighted to Introduce the "Display of Share Price Information" in Real Time and Delayed channels using the newly launched NSE Market Data Application Programming Interface (API).

NSE MARKET DATA API

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Market Data User Segments (New Products Launched in 2016)

S/N	Products	Broker Dealers	Retail Investors	Fund /Portfolio Managers	Listed Companies	Regulators
1	DataXplorer Reports Notification					
2	XGEN News Alert					
3	NSE Odata Feed					
4	Issuer Share Price					
5	Market Data API					
6	Ticker/Display Data					
7	Video Wall					

The Future of Market Data (... and Trading)



Latency Wars will continue

"A one (1) millisecond advantage in trading applications can be worth \$100 million a year to a major brokerage firm."

-Information Week Magazine

Big Data and Analytics will offer competitive advantage

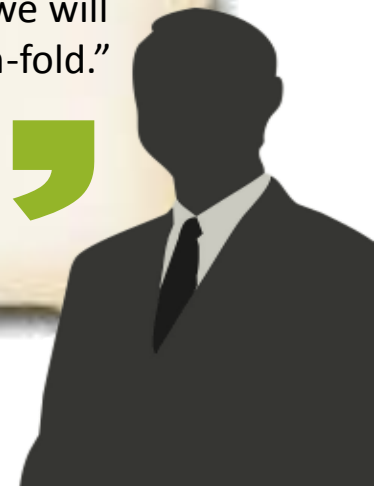
"Without big data analytics, companies are blind and deaf, wandering out onto the web like deer on a freeway."

-Geoffrey Moore, author and consultant

Robo-Advisers will rule the day.... Eventually

"Artificial intelligence will reach human levels by around 2029. Follow that out further to, say, 2045, we will have multiplied the intelligence, the human biological machine intelligence of our civilization a billion-fold."

-Ray Kurzweil



Watch This Space!



*Market Data is the bedrock of **wise** and
successful investing.*

Processed data is information, processed information is knowledge, processed knowledge is **wisdom**. *Ankala V. Subbarao*



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THANK YOU And Happy Investing. *Questions & Answers.*

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- Improved site load-time . Enhanced content



Frequently Asked Questions



**THE Nigerian
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How can Market Data
enhance my **Investors
Relations** Strategy?

Issuers

How will **Licensing**
affect my
redistribution of
Market Data?

Data
Vendors

How much will it **cost**
me to **access** reliable
and timely Market
Data?

Investors



frequently
asked
QUESTIONS