Flowing With The Tide of Disruptive Technology for Chartered Accountants

68TH Induction Ceremony for New Members

Lawrence Amadi

November 2021
Outline

1. Technology Disruption “A Global Context”
2. The Nigerian Perspective
3. Impact of Digital Tools on the Accounting & Auditing Profession
4. What to Do?
Technology Disruption

“A Global Context”
KPMG’s CEO Outlook Survey 2017 tells us that:

Over half of CEO’s believe their organisations will face more disruption in the next three years than they have in the prior 50 years...

Do you think you will be different?

- 65% see disruption as an opportunity
- 67% of CEO’s believe they need to disrupt their organizations
- 25% have appointed chief digital officers

Source: KPMG 2019 global CEO outlook – Thursday July 4th 2019
"Every two days now we create as much information as we did from the dawn of civilization up until 2003"

Eric Schmidt,
Former CEO, Google
Today every business is a digital business

“The future of banking is less banking and more of financial services tailored to customers’ lifestyle needs.”

My vision is to make DBS invisible. We should be able to hide the banking service in something else that the customer really wants to do with their life, and it should be just completely seamless.

Piyush Gupta, CEO, DBS Group
Today’s digital consumers have higher expectations of their financial institution than ever before.

AI & Robotics cover a range of emerging technologies being used in driving operational efficiency and cutting costs.

APIs provide a layer that serves to connect backend business services across digital applications across multiple channels.

Cloud technology has emerged as a primary enabler for dealing a demanding and expanding client base.
# Digital Business Models [Before & After Top 10 Companies]

### COMPARISON OF THE WORLD’S MOST VALUABLE COMPANIES (BY MARKET CAPITALIZATION) IN 2010 AND 2020

<table>
<thead>
<tr>
<th>2010 (third quarter)</th>
<th>2020 (third quarter)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong> $314.62B ExxonMobil</td>
<td><strong>Apple</strong> $1.98T</td>
</tr>
<tr>
<td><strong>2</strong> $270.89B PetroChina</td>
<td><strong>Microsoft</strong> $1.59T</td>
</tr>
<tr>
<td><strong>3</strong> $259.22B Apple</td>
<td><strong>Amazon</strong> $1.577T</td>
</tr>
<tr>
<td><strong>4</strong> $220.62B Petrobras</td>
<td><strong>Alphabet</strong> $999.57B</td>
</tr>
<tr>
<td><strong>5</strong> $213.36B ICBC</td>
<td><strong>Alibaba</strong> $795.40B</td>
</tr>
<tr>
<td><strong>6</strong> $210.67B Microsoft</td>
<td><strong>Facebook</strong> $746.10B</td>
</tr>
<tr>
<td><strong>7</strong> $205.34B China Mobile</td>
<td><strong>Tencent Holdings</strong> $646.79B</td>
</tr>
<tr>
<td><strong>8</strong> $204.79B Berkshire Hathaway</td>
<td><strong>Berkshire Hathaway</strong> $509.47B</td>
</tr>
<tr>
<td><strong>9</strong> $202.99B China Construction Bank</td>
<td><strong>Visa</strong> $425.51B</td>
</tr>
<tr>
<td><strong>10</strong> $196.87B BHP Billiton</td>
<td><strong>TSMC</strong> $420.44B</td>
</tr>
</tbody>
</table>

*8 of the 10 most valuable companies in the world in 2020 have extensively leveraged digital technologies to accelerate value realization*

Source
Financial Times Global 500
## OECD GDP Vs Top Corporations Market Cap (2021)

<table>
<thead>
<tr>
<th>Country/Company</th>
<th>Nominal GDP (country) or Market Cap (company)</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States of America</td>
<td>$21,433 B</td>
</tr>
<tr>
<td>China</td>
<td>$14,343 B</td>
</tr>
<tr>
<td>Japan</td>
<td>$5,082 B</td>
</tr>
<tr>
<td>Germany</td>
<td>$3,861 B</td>
</tr>
<tr>
<td>India</td>
<td>$2,869 B</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>$2,829 B</td>
</tr>
<tr>
<td>France</td>
<td>$2,716 B</td>
</tr>
<tr>
<td>Apple</td>
<td>$2,125 B</td>
</tr>
<tr>
<td>Italy</td>
<td>$2,004 B</td>
</tr>
<tr>
<td>Microsoft</td>
<td>$1,942 B</td>
</tr>
<tr>
<td>Saudi Aramco</td>
<td>$1,888 B</td>
</tr>
<tr>
<td>Brazil</td>
<td>$1,840 B</td>
</tr>
<tr>
<td>Canada</td>
<td>$1,736 B</td>
</tr>
<tr>
<td>Russia</td>
<td>$1,700 B</td>
</tr>
<tr>
<td>Amazon</td>
<td>$1,688 B</td>
</tr>
<tr>
<td>Alphabet</td>
<td>$1,656 B</td>
</tr>
<tr>
<td>South Korea</td>
<td>$1,647 B</td>
</tr>
</tbody>
</table>
The implication of digital transformation for incumbents who are not future-ready is dire.

The innovation of on-demand video streaming by Netflix led to the demise of Blockbuster.

The inhibition to evolve to a more digital focused organization led to the bankruptcy of Kodak.

Satisfaction with status quo led to the erosion of market share by online giant, Amazon.
The global giants are now expanding into businesses outside their core domain.
China Racing Head

Aiming to **lead by 2025** and have economic dominance by 2030

- **500 million faces**
- Police experimenting with **Facial Recognition glasses**
- **10,000 PhD Data Scientists**
- Health care data
The Nigerian Perspective
Nigeria has one of the largest millennial population in the world...

**Gen Z**
Still in High School, soon entering college and new to workforce. Tech fluent

72M
0 - 18 years

**Millennials**
Interconnected. More likely to have a mobile phone and a personal laptop

60M
18 - 38 years

**Gen X**
Time- crunched. Tech-friendly, but have more realistic expectations of enterprise tech

30M
39 - 52 years

**Boomers**
Born 1946 – 1964. Greatest disparity in tech literacy – influenced by Millennial children

27M
53 – 71 years

Digital adoption accelerating...
Emergence of FinTechs is Changing the Financial Services Landscape

The Nigerian Perspective

Investment Banking & Capital Markets
- Nairabox
- SureRemit
- paystack
- QuickRemit
- SimplePay
- fets
- etranzact
- remita
- Flutterwave
- Amplify
- cashenvy
- VoguePay
- ChatPay
- Paylater
- kiakia
- Social Lender
- imeela
- SnapCredit
- ONEFi
- SureCredit

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Insurance
- compare
- AutoGenius
- casava

Personal Finance
- piggybank.ng
- ALAT

Digital Bank
- NairaEx
- Luno
- Annexcoin

Blockchain/ CryptoCurrency
- BitPesa
- A

eCommerce
- konga.com
- JUMIA

Alternative Financing
- Payday
- mytradebook
- EGM
- Cheki
- PayPorte
- Mall for Africa

Lifestyle
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Recent Trends in Financial Service

Impact of Digital Tools in Delivering Audit Service

Disruption of landscape by non-banks (FinTechs)

Exploration of block chain technology

Adoption of chatbots for banking processes

Increasing adoption of USSD Banking Solution

Interswitch

Flutterwave

STELLAR

paystack
Impact of Digital Tools in Delivering Audit Service
Skills of the Future - The 2022 Job Landscape

Macro trends impacting organisations
- Changing workforce
- Talent optimisation
- Changing economic and business landscape

Emerging technologies
- Predictive Cloud analytics
- Intelligent Automation

Impact of Digital Tools in Delivering Audit Service

<table>
<thead>
<tr>
<th>Digital Marketing and Strategy Specialists</th>
<th>Artificial Intelligence and Machine Learning Specialists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Transformation Specialists</td>
<td>Ecommerce and Social Media Specialists</td>
</tr>
<tr>
<td>Organizational Development Specialists</td>
<td>Information Security Analysts</td>
</tr>
<tr>
<td>User Experience and Human-Machine Interaction Designers</td>
<td>Information Technology Services</td>
</tr>
<tr>
<td>Sales and Marketing Professionals*</td>
<td>Client Information and Customer Service Workers</td>
</tr>
<tr>
<td>Innovation Professionals</td>
<td>AI and Machine Learning Specialists</td>
</tr>
<tr>
<td>People and Culture Specialists</td>
<td>Big Data Specialists</td>
</tr>
<tr>
<td>Service and Solutions Designers</td>
<td>People and Culture Specialists</td>
</tr>
<tr>
<td>Training and Development Specialists</td>
<td>New Technology Specialists</td>
</tr>
<tr>
<td>Software and Applications Developers and Analysts*</td>
<td>People and Culture Specialists</td>
</tr>
</tbody>
</table>

Source: Future of Jobs Survey 2018, World Economic Forum
“What if we don’t change at all ... and something magical just happens?”
Impacts of New Technologies on Audit and Accounting (cont’d)

Focus on Audit/Accounting

- Predictive Analytics
- Digital Automation
- Cognitive Technologies
- Data and Analytics

Disrupting Landscape
- Customers
- Regulators
- Investors
- Partners
- Infrastructure
- Risks

Impact of Digital Tools in Delivering Audit Service
Digital technology: here and now

**JPMorgan**

300K

COIN

Hours of legal word reviewing financial deals

after

Contract Intelligence AI system

**FOXCONN Robots**

60,000

Workers replaced

500k FTE’s to be replaced by 1 Million robots

**Big 4 firm**

50%

Big 4 firm has announced a reduction of at least 50% in graduate recruitment

**JD.com robot-run warehouse in Shanghai**

200k

Packages processed every hour

1 Person employed

where

500 Previously

Using robotic unloading systems, barcode scanning, automated vans and even drone deliveries

**KPMG Loans Tool**

100%

Of a bank’s loan book can now be reviewed and reassessed by AI

**Tesla & SpaceX beyond Current Ambitions**

3b miles

autopilot miles driven (04/2020)

4,425

Cross-linked communications satellites

About

60

As of May 2021

**Autodesk**

Generative Design

In: Constraints eg. weight, cost etc.

Out: Optimised design

**Bank of England**

15m

Jobs have potential to be automated in the UK out of 34m

**300K**

**JPMorgan**

**COIN**

**FOXCONN Robots**

**Big 4 firm**

**JD.com robot-run warehouse in Shanghai**

**KPMG Loans Tool**

**Tesla & SpaceX beyond Current Ambitions**

**Autodesk**

**Bank of England**

Digital technology: here and now

**300K**

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**KPMG Loans Tool**

**Tesla & SpaceX beyond Current Ambitions**

**Autodesk**

**Bank of England**
No single organization has all the IT assurance resources it needs because of the sheer breadth of skills required and the cost of maintaining, training and developing in-house resources to cover all the bases.
The New Face of Data Analytics & Forensic Tools

Impact of Digital Tools in Delivering Audit Service

SAS Enterprise Miner
IDEA
ACL
KDAT/KTRACE
Clearwell
Data Robot
Python
Arbutus Analyzer
Knime
R programming language
Forensic Toolkit
DTsearch
SoftCAAT
IBM i2 Analytics
Encase
Drones in Audit

Adopting drones for accounting/audits provides the following benefits for organizations:

- Improved Efficiency in Inventory Data Capture
- Centralized data collection and audit trails
- Elimination of Human Error in Inventory Data Capture
Drones in Audit

Use Cases

**Agriculture**
Drones are used for crop supervision, mapping of farmlands and herbicide spraying which help to drastically cost of farm operations.

**Energy**
Drones are used to execute inspection of rigs, vandalized oil lines etc.

**Infrastructure**
Drones are used for topography mapping in construction companies.

**Telecommunications**
Drones perform mast structural integrity inspections for telecommunication companies.

Challenges

**Weather**
Drones are less effective in high winds or rain with wind, rain and snow.

**Regulation**
Preapproved access before deployment and other regulations by the Nigeria Civil Aviation Authority (NCAA) are major hindrances to drone adoption.

**Theft**
When used for delivery, drones are only able to drop parcels in a relatively open area and thus prone to theft.

**Cost of Adoption**
Small scale business may not be able to deploy on a large scale.
Drone in Nigeria – A case of Beat Drone

Case of Beat Drone as at 2018

**Impact**

**Farm Mapping**
- Better health assessment of crops,
- Soil analysis which benefit the planning of seed planting pattern
- Thermal imagery showing parts of the field lacking adequate water.

**Fertilizer Spraying;**
- Maintains the right distance from the crops when spraying fertilizers,
- Faster pace than traditional machinery.

**Inventory**
- Generate inventory to optimize operation management and boost profit

**Traceability**
- Tracking what has been done on the field and improving sustainability.

- **7** States
- **40,000** Hectares of rice farms being serviced
- **N5m** Won in Bank’s TechFest in May 2019
Audit Automation Through Robotics

AudyBOT - KPMG Automated Audit Assistant is a multi technology audit toolbox which is used to digitize the control assessments and testing using advanced automation capabilities.

**AudyBot At A Glance**

- **40+** No. of Bots built

- Bots developed by a team comprising of auditors, risk management professionals and developers who have extensive knowledge on the subject and the technology respectively

- Bots developed to assist in SOX, Internal Audits, Third party risk assessments and Background Verifications for forensic teams

- Bots developed to assist Eth Hack teams in preparation of penetration testing reports in excel and PPT formats

- Bots developed to assist in performing configuration testing at application, OS and DB level

- Bots designed for sectors including financial sectors, manufacturing and industrial markets

- Bots which are task masters specifically developed for assisting in extraction of relevant information from various application and uploading of work papers in the assessment tools

**Integrated Technologies in AudyBOT platform**

- Cognition
- Visualization
- Analytics
- Scripts
- OCR
- AudyBOT Platform

AudyBot Platform
Transform How Assessments are Performed

Future State – Accelerated Control Assessment

- Key financial applications scoping
- Conduct Walkthroughs
- Clarifications
- Complete Documentation
- Workpaper Review & QA
- Soft close calls and final report

Automated Audit Assistants

Current State- Traditional Control Assessment

- Risk Assessment via RCM
- Key financial applications scoping
- Identify automated application controls
- Prepare Evidence Requirement List (PBC)
- Conduct Walkthroughs
- Collect Audit Data for every sample
- Perform Test Procedures
- Report Exceptions
- Evidence Management
- Partial Documentation
- Soft close calls and final report

Manual activities

Savings

Acceleration in control assessment
Automated Audit Assistant for Controls Assessment and Assurance

Our Bot Portal Snapshot

KPMG Audybot
the Digital Audit Assistant

Invalid Logon Attempt SAP Negative Testing

Bot for testing invalid user logon attempt configuration on SAP
IT General 2:04 mins

KPMG Audybot
the Digital Audit Assistant

RSPARAM Password Configuration Testing

Bot for testing password configuration parameters in SAP against baseline security configuration
IT General 3:22 mins

KPMG Audybot
the Digital Audit Assistant

Developers Access to Production in SAP

Bot for testing segregation of duties between developers’ access to production environment in SAP
IT General 12:36 mins

KPMG Audybot
the Digital Audit Assistant

User Access Revocation in SAP

Bot for testing SAP user access revocation control integrated with ACL and Tableau dashboard
IT General 5:40 mins

KPMG Audybot
the Digital Audit Assistant

Change Management Approval

Bot for testing change management approvals with pre-provided client evidence with evidence exception handling.
IT General 10:54 mins

KPMG Audybot
the Digital Audit Assistant

User Access Creation

Bot for testing SAP user access creation integrated with a ticketing system.
IT General 7:28 mins
In Conclusion

Disruption is part of our lives!

Mobile Will Define More

Skills Acquisition

Analytics
Scan the code on the right to download select KPMG Thought Leadership materials or follow the link

https://goo.gl/YVpFd8
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Partner & Head, Technology Assurance
KPMG Advisory Services
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