

Emergence of AI in Banking Operations

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1 | Drivers

Emergence of disruptive technologies such as AI is driven by a number of forces....

...rapid changes in client behavior is perhaps the most prevalent

Demographics
Millennials and Gen Z aging into market

60 million digital natives age 13-35 in Nigeria willing to try and adopt new market innovations

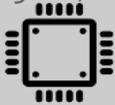
Mobility
Increased proliferation of smart phones



81% mobile phone penetration in Nigeria

53% internet penetration

Technology
Significant advances in next generation technologies, analytics, infrastructure



How can banks drive success in this changing environment?

Attitudes
Young and discontent

70%+

- would rather go to the dentist than listen to what Banks are saying
- believe that in 5 years the way we pay for things will be totally different



Connectivity
Always on connectivity with increasing number of devices

Innovation
Available money flow for innovation

\$4T \$4 trillion addressable financial services market with flow of \$24b in 2015 to new FinTechs



Banking Spotlight

<20%
of global banks can be classified as Digitally Mature Banks

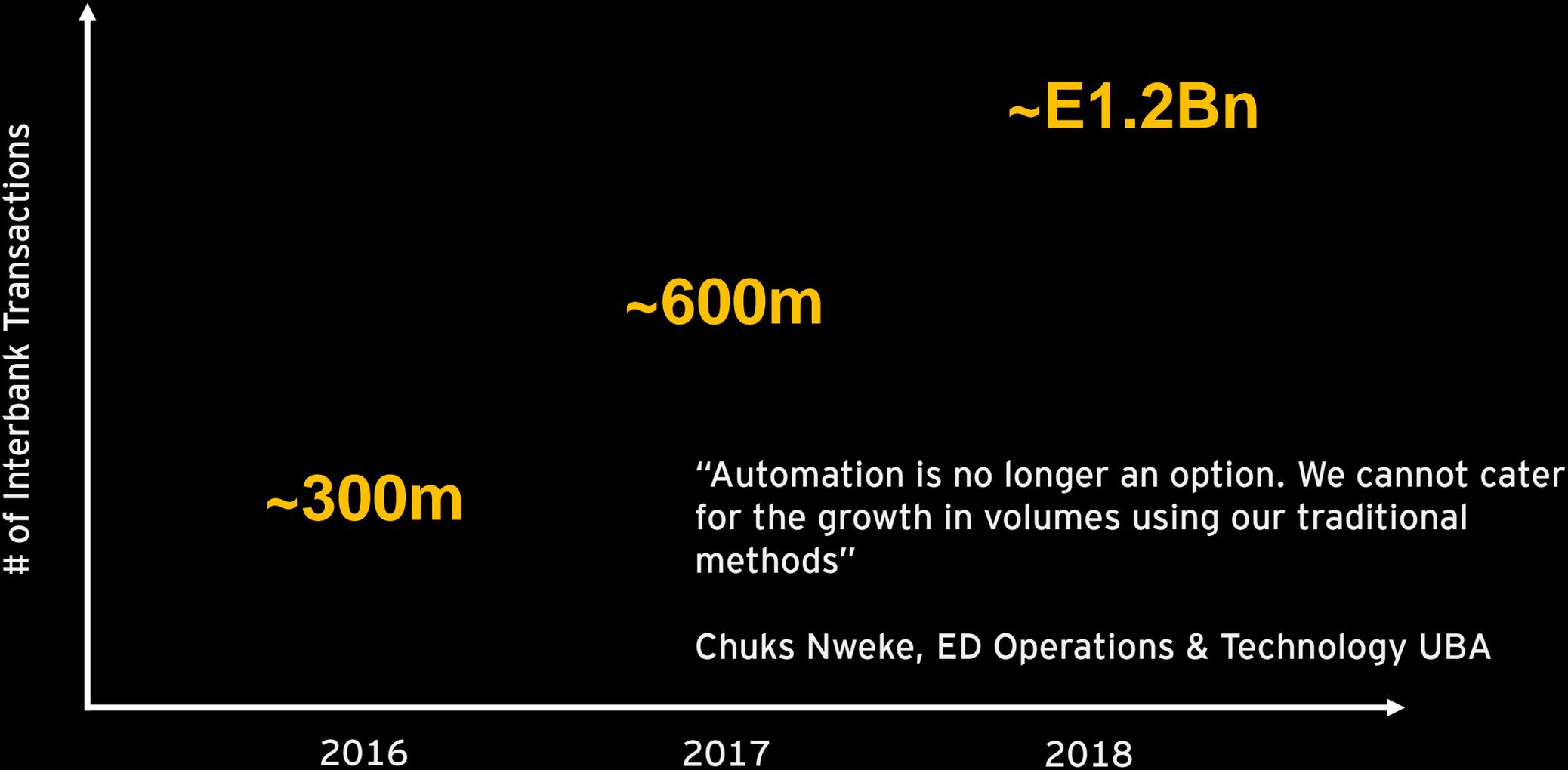
65%
Of customers think having a digital presence is highly important

80%
4 of top 5 reasons why a customer will switch is customer experience

Innovators are taking advantage of market trends and changing consumer expectations.



...followed by massive growth in transaction volumes



...leading to an explosion of data

2.5

Quintillion bytes of data generated daily



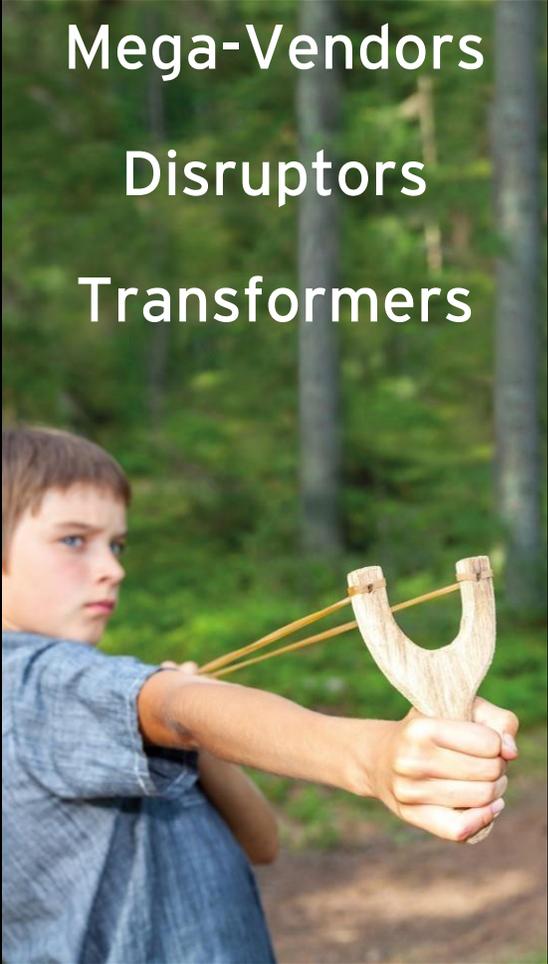
90% of the data in the world today was created in the last 2 years

35 days

For a new technology to reach a critical mass of 50m users. 50 billion connected devices by 2020

Retailers who leverage the full power of big data could increase their operating margins by as much as

60%.



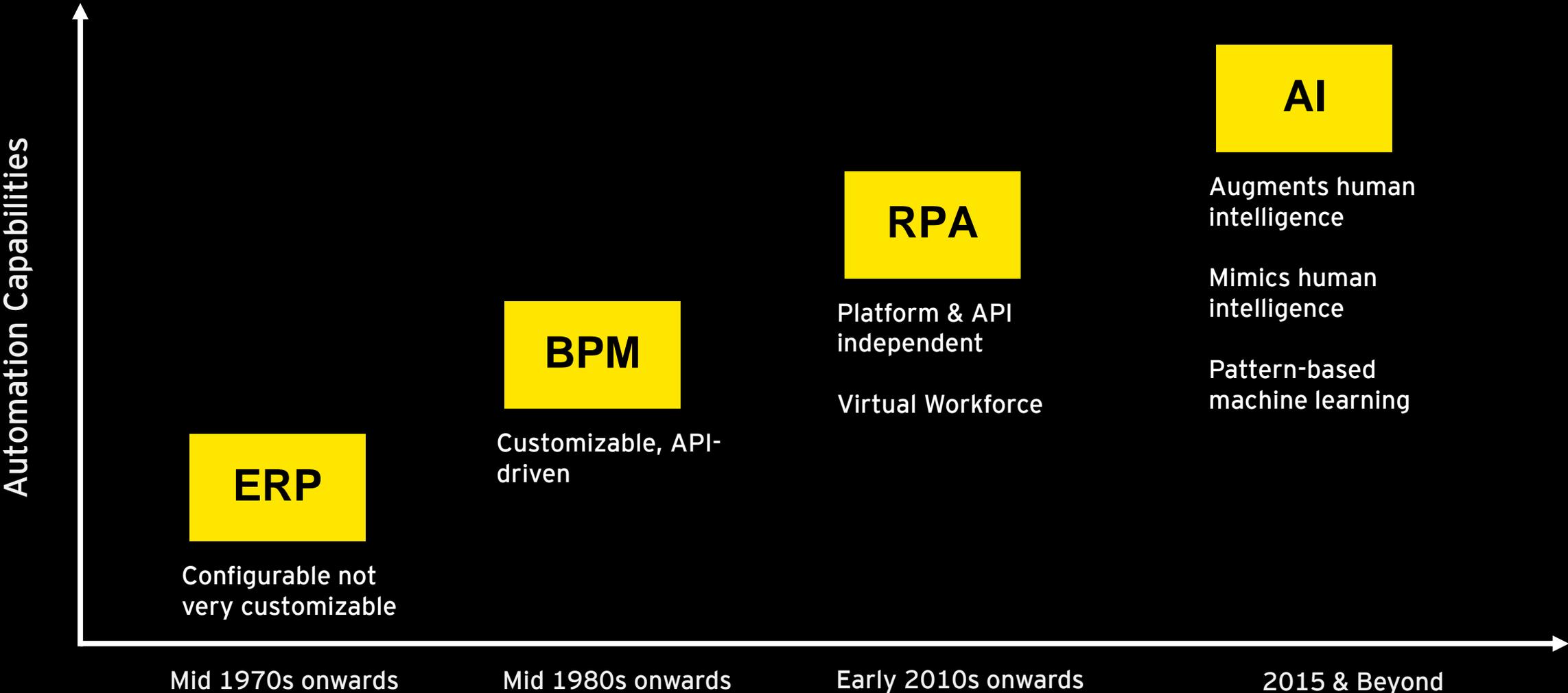
Mega-Vendors
Disruptors
Transformers

Only 3%

Of the potentially useful data is tagged and even less is analysed

For a typical Fortune 1000 company, just a 10% increase in data accessibility will result in more than \$65 million additional net income.

We have witnessed an evolution of process automation over the last 30+ years



2 | What is AI?

“AI is everything – and everywhere”

**Sundar Pichai,
Google CEO**

“The biggest thing that we're focused on with AI is building computer services that have better perception than people”

Mark Zuckerberg, Facebook CEO

It's hard to overstate how big of an impact AI is going to have on society over the next 20 years

**Jeff Bezos,
Amazon CEO**

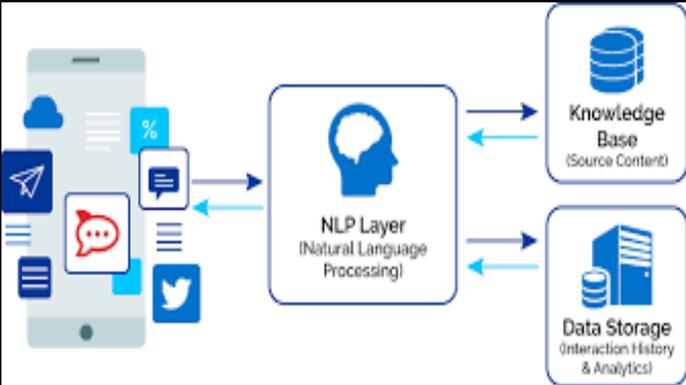
“One purpose of autonomous systems is self-driving cars – there are others. And we sort of see it as the mother of all AI projects”

**Tim Cook,
Apple CEO**

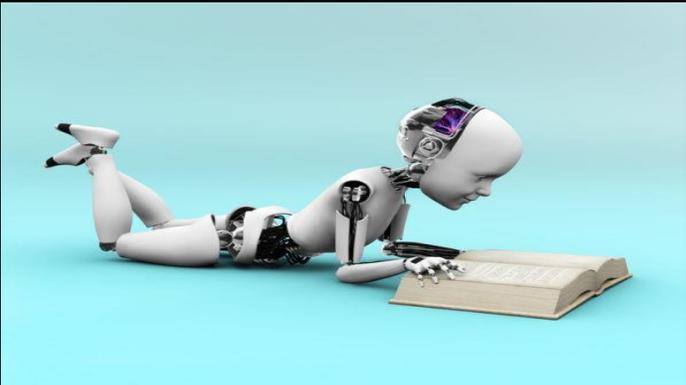
We are infusing AI into everything we deliver across our computing platforms and experiences

Satya Nadella, Microsoft CEO

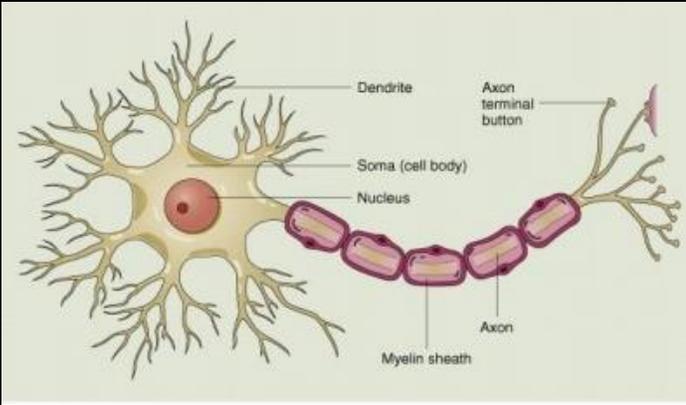
AI is simulated intelligence in machines, making machines “think” like humans and mimic the way we act



Natural Language Processing



Machine Learning



Neural Network



Deep Learning

3 | AI in Banking 'Use Cases'

The application of AI globally can be grouped into 3 major buckets

Revenue

1

Predicting advanced dormancy

Utilising ML to improve customer interaction for Leading UK bank

- ▶ 67% accurate advanced dormancy prediction

2

Improved customer churn prediction

Using social network analytics to estimate Customer Churn at a Leading UK bank

- ▶ 16% improvement in estimation leading to proactive interventions

Efficiency

3

Saving cost with RPA

Using Robotics for the end to end ATM reconciliation and refunds process

- ▶ 95% reduction in TAT
- ▶ 50% reduction in cost
- ▶ + Customer experience

4

Reducing AHT

Improve automated call reason identification and reduces average handle time

- ▶ 70% Improved accuracy and consistency of trigger

Risk

7

Detecting CNP fraud

Using predictive analytics to determine 'card not present' fraud detection

- ▶ 40% of total CNP Fraud for following 3 months were captured.

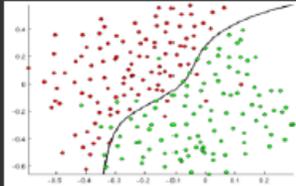
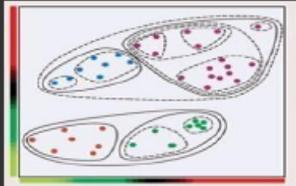
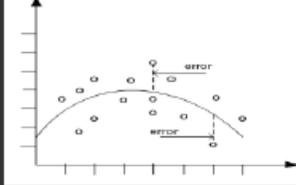
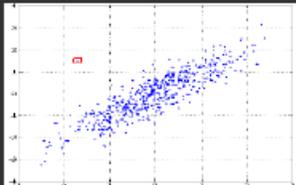
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More accurate credit scoring

Mining large volumes of data to better assess the creditworthiness of loan applicants

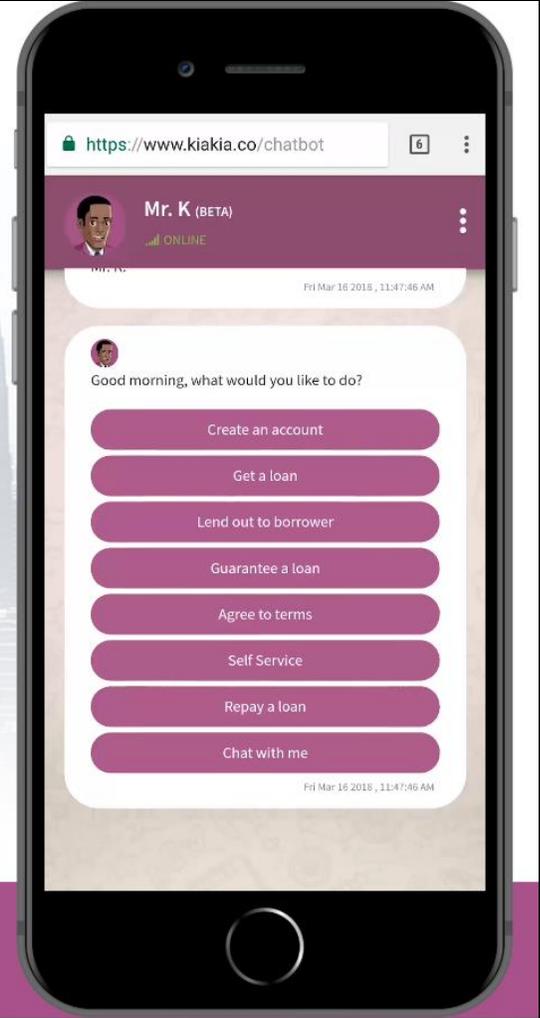
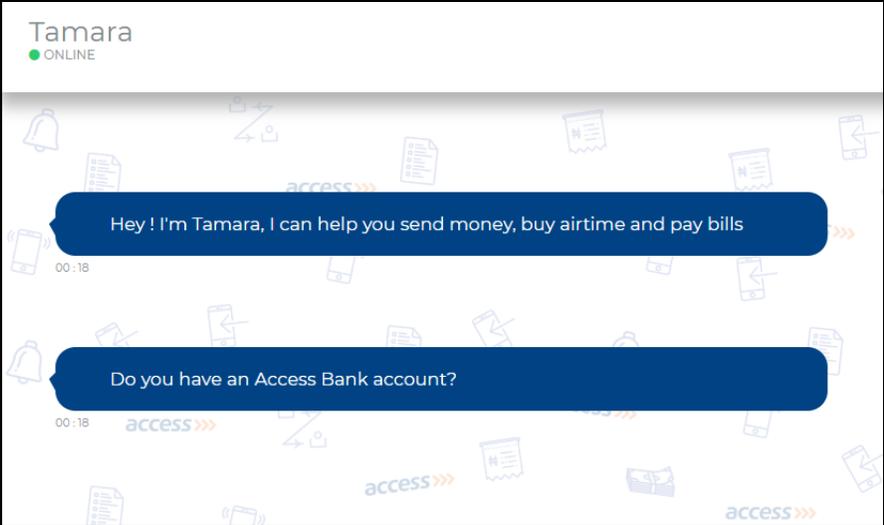
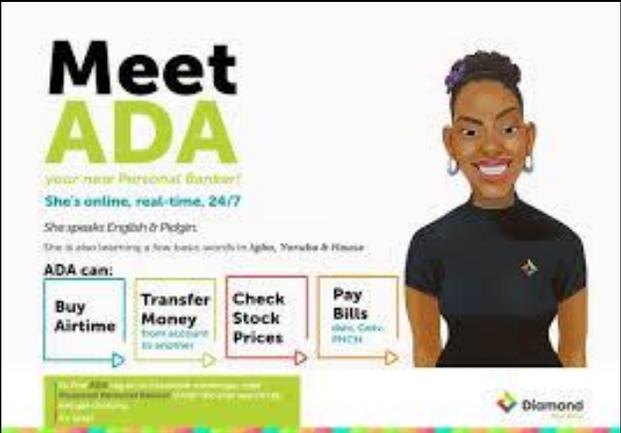
- ▶ 50% improvement in decision making

More Use Cases

Use cases	Uses	Approach	MI technique	
<p>Customer Attrition Compliance Concerns High Risk Behavior Analysis</p>	<ul style="list-style-type: none"> ▶ Category Prediction ▶ Sentiment Analysis ▶ Compliance 	<p>Categorical Prediction (Classification)</p>		<ul style="list-style-type: none"> ▶ Decision tree/forests ▶ Support Vector Machines (SVM) ▶ Neural Networks ▶ Naive Bayes
<p>Customer Preference Customer Experience</p>	<ul style="list-style-type: none"> ▶ Offering/Market Segmentation ▶ Topic Mining ▶ Pattern Discovery ▶ Network Analysis ▶ Population Research ▶ Image Analysis 	<p>Discovering Structure (Clustering)</p>		<ul style="list-style-type: none"> ▶ K-means clustering ▶ SOM Neural Network
<p>Default Risk Forecasting Sales/Profit Optimization</p>	<ul style="list-style-type: none"> ▶ Forecasting ▶ Designing Simulations ▶ Minimizing Risk ▶ Cost Analysis ▶ Optimization 	<p>Value Estimation (Regression)</p>		<ul style="list-style-type: none"> ▶ Neural Networks ▶ Linear/Polynomial Regression ▶ XGBoost ▶ Collaborative Filtering
<p>Insider trading Transaction Fraud</p>	<ul style="list-style-type: none"> ▶ Transaction Monitoring ▶ AML ▶ Compliance ▶ Trend Detection ▶ Identification Theft 	<p>Irregularity Identification (Anomaly Detection)</p>		<ul style="list-style-type: none"> ▶ Hazard Function (Survival Analysis) ▶ Poison Regression ▶ Bayesian Analysis

**Applications and Approaches are not mutually exclusive, this is a general overview. Problems can be solved using a variety of methods*

Locally the highest adoption in the customer engagement space



4 | Implications of AI

What does all this mean for the workforce, systems control and cyber security

Skills

Better Cyber Capabilities

Data Quality

Cyber Risks??

Job Losses





Thank you!