Mahindra COMVIVA

TOWARDS TOMORROWS

ISSUE 4, VOLUME 1

BIG DATA ANALYTICS

Gearing Operators for Today's Challenges and Tomorrow's Opportunities

REVENUE AND CUSTOMER EXPERIENCE UPSIDE FOR TELECOM OPERATORS


Cloud
Plan
Do
Check
Act
$$$
Success
IDEA
Team
Production
Key

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BIG DATA
IS NOT
JUST ANY
INDUSTRY
BUZZWORD.

INTRODUCTION

Big data is not just any industry buzzword. It is now increasingly becoming clear that big data has a big role to play in improving revenue, customer experience as well operations, especially in industries that have a large customer base like telecom.

Telecom operators are already collecting huge amounts of data from their networks and systems to better their services. However, the profusion of connected devices and sensors, aided by faster networks and better connectivity have led to a data explosion on an unimaginable scale.
In addition to this structured data, telecom operators have to consider new data sources like blogs, tweets, surveys, chats that are being generated at great velocity as well as volume. Today's data challenge before telecom operators is how to reconcile data coming at great velocity, volume and variety with the added dimension of time and provide high ROI on their investments.

At the same time it is important to understand that data, information and actionable insights are not synonymous. An insight that drives you to action is more valuable than an insight that just answers your question. Actionable insights are the treasured output of all the work that goes into collecting, preparing and analysing your data. This calls for a well calibrated approach laying down what goals you are trying to achieve and mapping your big data initiatives to your business requirements.

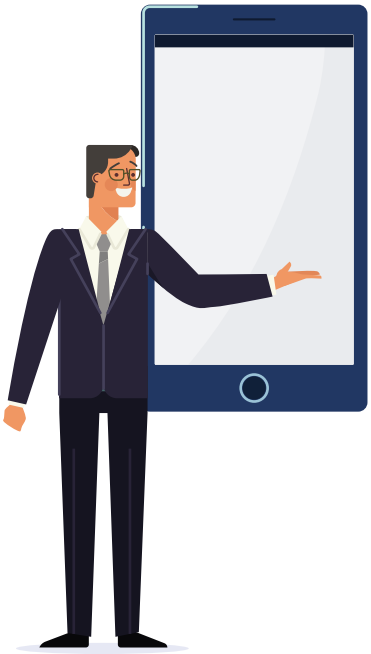
In this e-book, we have provided an overview of the big data market, challenges and how operators can benefit through a calibrated big data approach.

BIG DATA OVERVIEW

Over the past few years, the volume of data generated in the global telecommunications space has grown exponentially. This is largely owing to the growth of smartphones, mobile broadband, peer-to-peer traffic, mobile data, the social media explosion and the increase in video-based services.

CURRENT TRENDS
IN BIG DATA IN THE MARKET

The Mobile Network in 2016



Global mobile data traffic: **7.2 exabytes** per month in end-2016, from **4.4 exabytes** per month in end-2015

Almost **half a billion (429 million)** mobile devices and connections were added

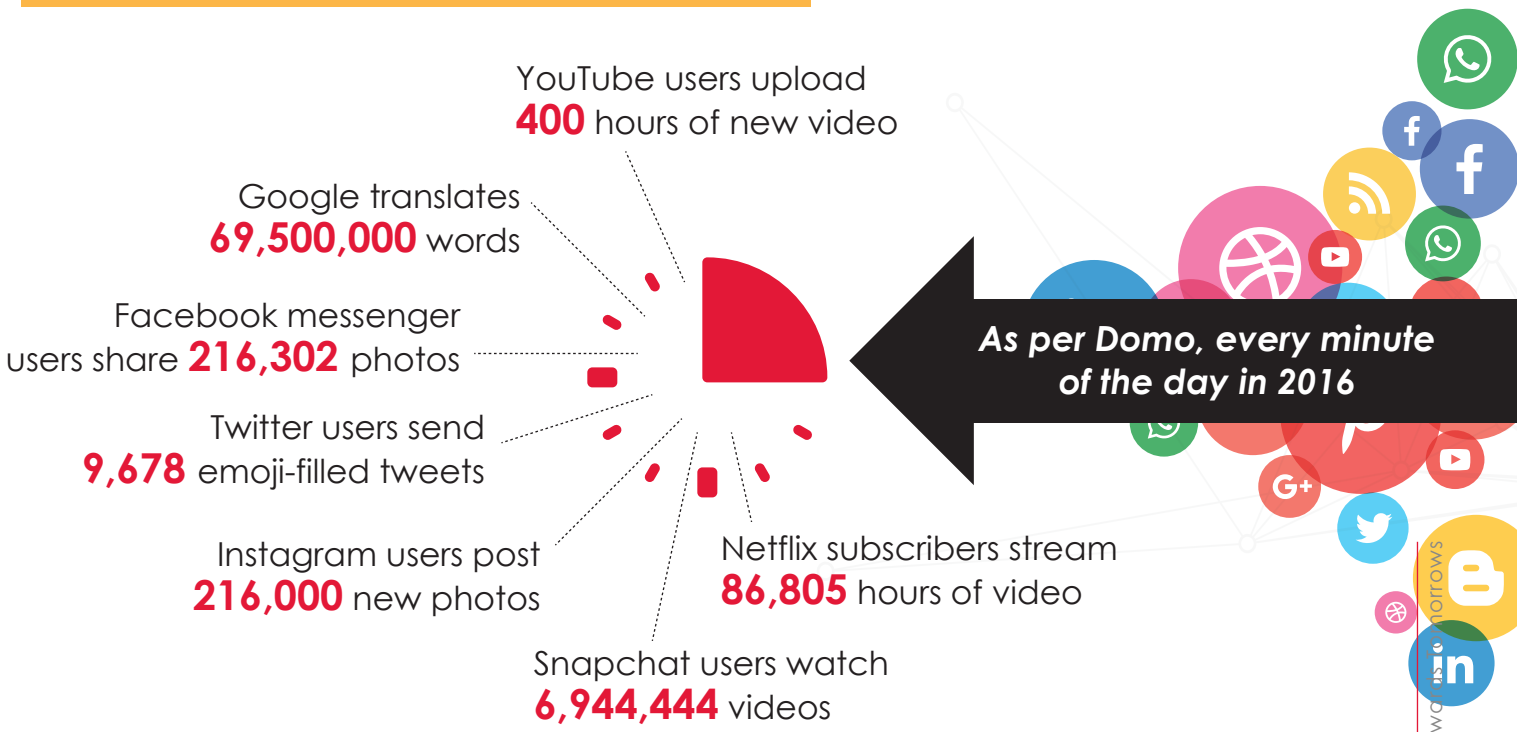
Mobile video traffic accounted for **60 per cent** of total mobile data traffic

Average smartphone usage grew **38 per cent**

Smartphones (including phablets) represented **81 per cent** of total mobile traffic

Source: *Cisco® Visual Networking Index Global Mobile Data Traffic Forecast Update*

The Global Data Explosion



Source: *Domo Data Never Sleeps 4.0*

It doesn't end there, of course. Going forward, this surge in data is expected to grow even further. As per industry analysts, the data explosion will be fuelled by customer demands for low-latency services, which emphasise on video, are integrative and interactive.

Monthly global mobile data traffic will be 49 exabytes by 2021, and annual traffic will exceed half a zettabyte

Over three-fourths (78 percent) of the world's mobile data traffic will be video by 2021

FUTURE TRENDS IN BIG DATA

The average global **mobile connection speed will surpass 20 Mbps by 2021**

The average **smartphone will generate 6.8 GB of traffic per month by** 2021, **a fourfold increase over the 2016 average of 1.6 GB** per month

The total number of smartphones (including phablets) will be over 50 percent of global devices and connections by 2021

Smartphones will surpass four-fifths of mobile data traffic **(86 per cent)** by 2021

Source: *Cisco® Visual Networking Index Global Mobile Data Traffic Forecast Update*

Clearly, telecom operators have (and can) access to a significant chunk of data. Yet, the twin keys to healthy bottomlines-i.e.-actionable insights into customer behaviour and a real-time, end-to-end view of the customer-continue to evade these players.

CHALLENGES COMING IN THE WAY OF UTILIZING BIG DATA

Before big data can be leveraged effectively, though, a number of challenges remain.

*First and foremost, **the four "V's" of the data** coming in is what creates the challenge.*

Globally, **180 zettabytes of data** (or 180 trillion gigabytes) will be **generated in 2025**, up from less than 10 zettabytes in 2015

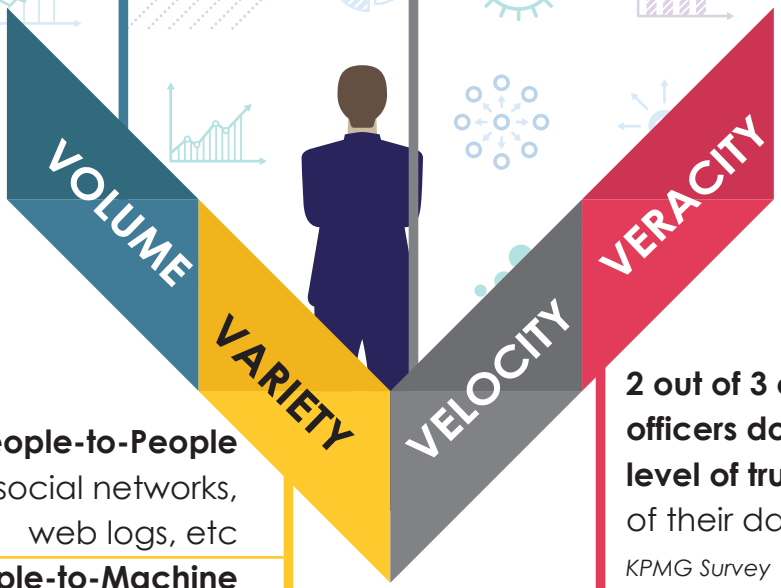
source: IDC

61,141 hours of music accessed every minute on Pandora

48,000 applications downloaded on Apple

8,333 videos shared by Vine users

Source: Domo Data Never Sleeps 4.0



People-to-People
virtual communities, social networks, web logs, etc

People-to-Machine
Archives, digital television, e-commerce, smart cards, computers, mobile handsets, etc

Machine-to-Machine
sensors, GPS devices, bar codes, scanners, surveillance cameras, etc

2 out of 3 chief executive officers do not have a high level of trust in the accuracy of their data and analytics

KPMG Survey

Secondly, operators ought to ask ***pertinent questions whilst implementing a big data-centric strategy***

Does the current data management landscape address the risks pertaining to the lifecycle of big data?

Can the velocity, variety, veracity and volume of big data be tamed?

Can the current set-up simplify or manage unstructured data?

Is the big data platform able to provide actionable insights?

Is the existing security infrastructure adequate to deal with the increasing demands of securing a rapidly growing stock of data?

MAKING SENSE OF BIG DATA

Operators can better know their customers and act on that information through effective personalization and segmentation

It is estimated that through 2015 **85% of Fortune 500 organizations were unable to exploit big data for** competitive advantages.

– Gartner

In the next 10 years, the companies that don't have analytics deeply embedded in their business model will most likely cease to exist.

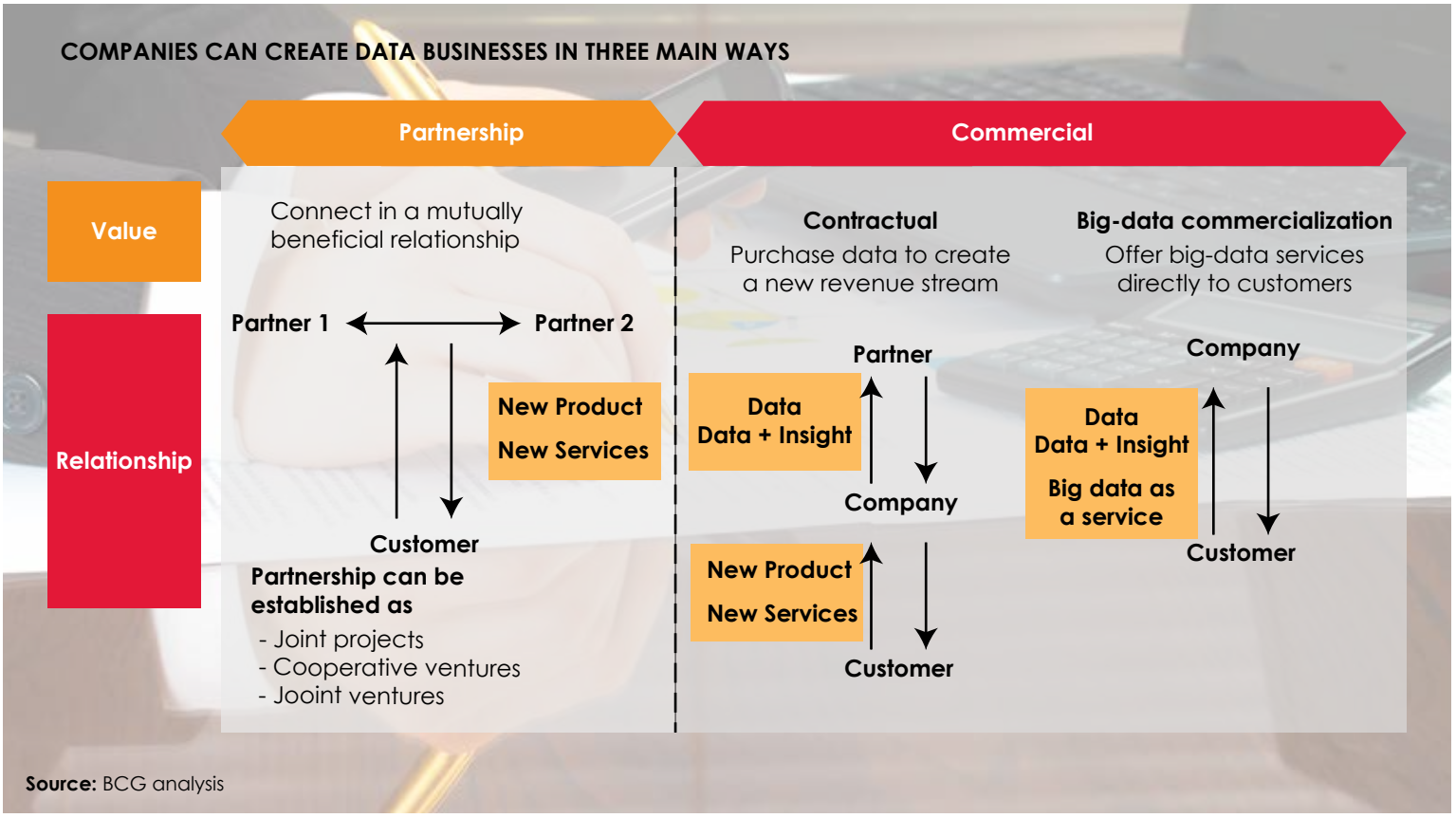
– Gartner

Assessing the predictive lifetime value of the customer;
How will customer spend?
Propensity to engage, convert, buy

Upsell, cross-sell, next best offering, real-time marketing

Behavioural clustering -
How do customers behave?
Are they discount addicts?
How frequently do they buy?
This algorithm helps marketers bettering understand their behaviour...

BIG DATA
BIG OPPORTUNITIES



Partners can come from unrelated business, depending upon the objectives the business wants to achieve, the gaps it faces in achieving these goals, the ecosystem in which it operates and the relationships that can be built over a period of time.

For example, a partner could a bank, which could allow the telecom company to enter a new venture, and allow the bank to leverage big data analytics capability to provide contextual, personalized real time banking solution to its clients.

Operators can also decide to commercialize its big data capability through data monetization or revenue and experience management.

REVENUE OPPORTUNITIES

"Organizations with real time data visualization achieved a **26% increase in new pipeline accounts** identified."

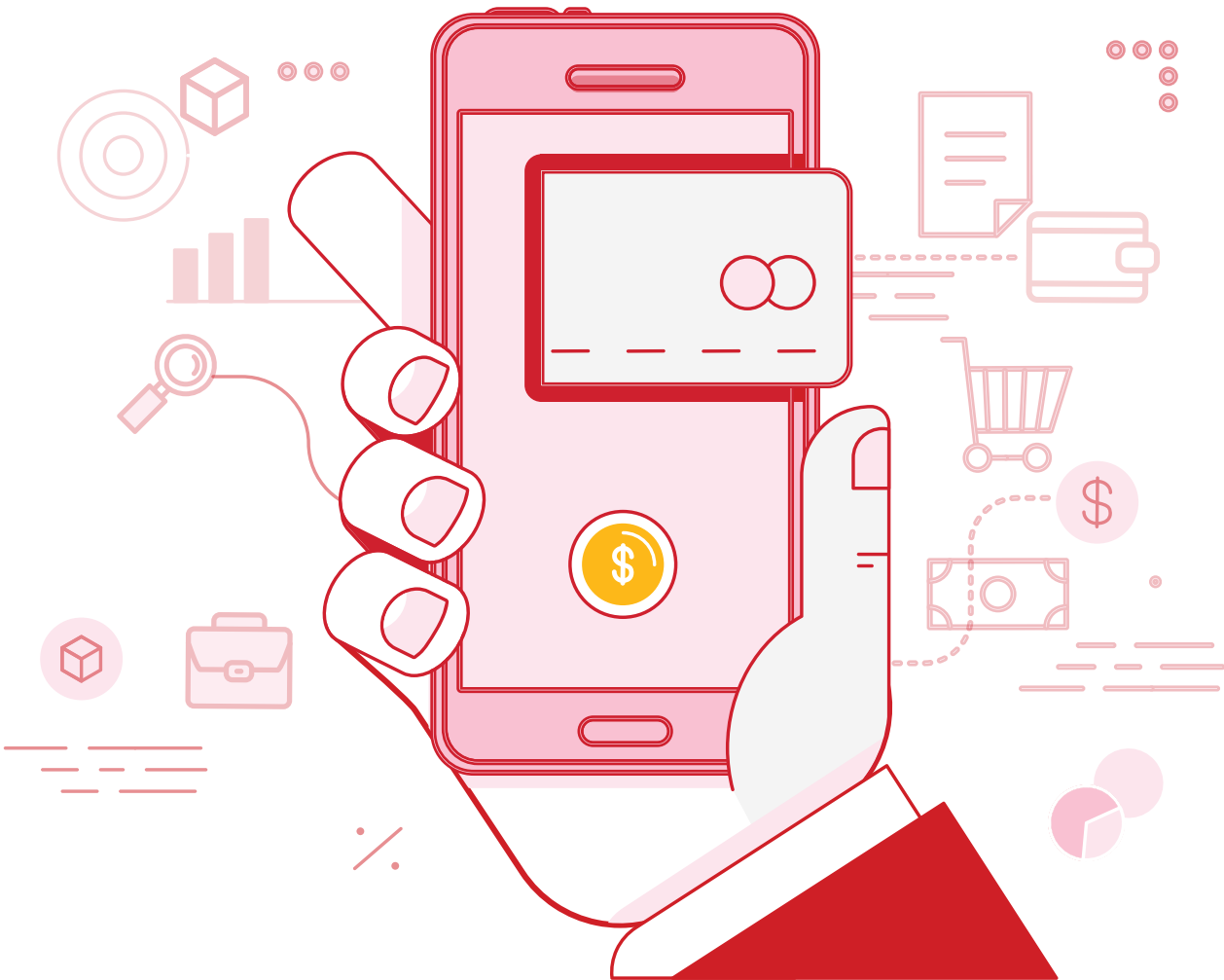
– Aberdeen

Organizations with real time data visualization achieved a **15% increase in cash generated** from operations."

– Aberdeen

Engaging with **customers lead to 40% more revenue** per person

Personalization can **lead to 5X – 6X ROI** on marketing spend



REVENUE IMPROVEMENT

REAL-TIME OFFERS

If we consider the churn rates in telecom, and the subsequent loss in revenues, plus the cost acquiring new customers, real time, contextuality and personalization become important.

Simply put, if you want to know what the customer is doing at a particular instant, you should be able to address them directly at the point when their attention is highest with offers that anticipate their needs.

With a better understanding of the customer, the telecom operator is able to drive better customer engagement by offering personalized and real time offers and deal when the customer's attention is the highest.

For example, a customer running low on data receives an offer to renew their data package. The customer renews their data package and at a discount from their mobile device, resulting in a revenue boost for the operator and streamlined experience for the customer.

Big data analytics matches customer consumption pattern with historical data and also with other customers with similar buying behaviour to provide a real time, customized and personalized offer.

CAMPAIGN MANAGEMENT

Telecom companies have to engage with the customer across their lifecycle to drive revenues as well as retention. Real-time analytics provide operators with the means to analyse, correlates and act on insights which help to stop churn. It helps to uncover behavioural patterns that are highly personal and drive responses that are ultra – timely. This can convert about-to-churn customers into loyal customers who know they are understood and want to stay put.

REVENUE ASSURANCE AND FRAUD MANAGEMENT

Telecom operators face an estimated global average loss of $294 billion resulting from uncollected revenues and fraud. ITU estimates that operator's aggregated yearly loss is approximately 6 per cent of their turnover. In revenue terms, this means that **operators are losing 30 billion or more every year**. Indeed it is difficult to assess the loss because indirect costs like billing, customer experienced are difficult to quantify and measure.

Source: CFCA

Rule-based and fraud management don't work because it takes days and even weeks to understand the fraud and by that time the operator has already been defrauded. Unsupervised machine learning tools when applied to lakes of operator and customer data is able to unearth instances of frauds in minutes rather than days and weeks. Visualization tools enable quicker understanding of fraud technique or method. **Machine learning and visualization tools offer one-two combo in the fight against telecom fraud.**

NEW REVENUE STREAMS

DATA MONETIZATION

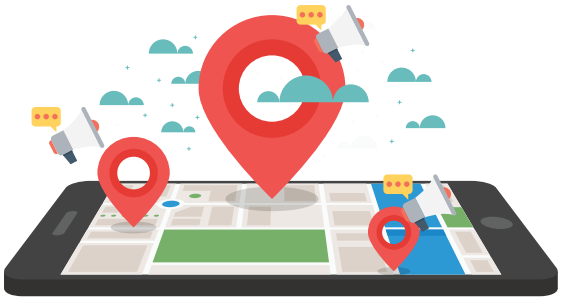
New revenue streams from services based on customer's location and behaviours.

Anonymized data derived from customers can provide a wealth of insights on their shopping habits, interests, travel and browsing habits.

LOCATION BASED ADS

AB UK study found that **46 per cent of people use ad blockers** because ads are 'often irrelevant

According to Starbucks, the **possibility of a person entering a store increased by 100 per cent** after seeing a location-based ad.



Blanket offers are passé, especially with so much of context available everywhere. Sensors embedded inside the customer's mobile are able to capture context about the customer's location, creating scope for personalized offers that are certainly more relevant and much less likely to be blocked.

INTERNET OF THINGS

Telecom operators can benefit by focussing on the proliferation of connected devices and leverage analytics to mine real or near real time data. This can help telecom operators to venture into smart cities, connected cars, health care and other government initiatives.

EXPERIENCE OPPORTUNITY

It wouldn't be an understatement to say that customer experience management makes or breaks a brand. This is especially true today, since telecom operators live in precarious times, with falling average revenue per user and wafer-thin profit margins. To top it all, bad customer service is a major reason for customer churn.

By 2020,
customer experience will overtake price and product as the key brand differentiator
-Walker

It takes 12 positive service experiences to make up for one negative experience-"Understanding Customers" by Ruby Newell
-Walker

By 2020 the demand for an omni-channel customer experience will be amplified by the need for near perfect execution
- PricewaterhouseCoopers

70 percent of buying experiences are based on how the customer feels they are being treated
– McKinsey

Therefore, operators ought to focus on what makes customers tick. Leveraging big data analytics in this context helps these players to make sense of the copious amounts of data collected from various sources.

RETAINING *(AND WINNING OVER)* CUSTOMERS

67 per cent customer churn is preventable if the customer issue was resolved at the first engagement.
(ThinkJar)

85 per cent of customer churn due to poor service was preventable.
(ThinkJar)

A **2 per cent** increase in customer retention has the same effect as decreasing costs by 10 per cent-*Leading on the Edge of Chaos, Emmet Murphy and Mark Murphy*

To begin with, operators ought to move away from offering limited products and services through limited channels. Big data analytics enables these players to develop more sophisticated and personalized offerings, which ought to be delivered and serviced through multiple channels. This will help assure the customer that the brand is omnipresent and is proactive in terms of customer care.

PROACTIVE CARE IS THE KEY

75 per cent of online customers expect help within five minutes

-Mckinsey & Company

66 per cent of consumers say they are likely to switch brands if they are treated like a number instead of an individual

-Salesforce

64 per cent of consumers (B2C) and **80 per cent** of business buyers (B2B) expect real time communication with companies

-Salesforce

89 per cent of customers get frustrated because they need to repeat their issues to multiple representatives

-Accenture

In this context, operators ought to focus on two keywords-consistency and ease of interaction. Moreover, by and large, customers are averse to speaking to customer care executives or contacting the same company for the same query over and over again. Therefore, big data analytics can help a company obtain a better understanding of what customers want and are able to create tailored messages. In addition, customer complaints can be reduced or even mitigated, if an employee has all possible information at hand when dealing with a customer.

THE RISE OF SELF-CARE

Only **36 per cent** of contact centers have implemented multichannel integration to provide consistent experiences; 70 per cent do not train agents to support multiple channels, and 56 per cent do not offer an agent-facing knowledge management solution

-Forrester Research

By 2020, a customer will manage **85 per cent** of the relationship with an enterprise without interacting with a human

-Gartner

90 per cent of all consumers expect a brand or organization to offer a self-service support portal or frequently asked questions (FAQ) page

-Microsoft

To stand apart from the clutter, operators ought to ensure the availability of real-time services. Today's customer expects a brand to deliver convenient and immediate services. Self-service thus comes to the fore. Ideally, customers should be enabled to carry out transactions like purchase additional data, pay bills, update contact details, or their plans or handsets on an immediate basis. This ought to help operators ensure customer stickiness, reduce cost and churn, increase sales and reduce usage of call centres.

DATA VISUALIZATION
– THE ENABLING LAYER FOR THE BIG DATA REVENUE AND EXPERIENCE OPPORTUNITY

Psychologist Albert Mehrabian has shown that **93 per cent of communication between human beings is in the non-verbal area.** It means that image can be immediate, while language requires time to analyze.

01 "Organizations with real time data visualization achieved a 26% increase in new pipe-line accounts identified." – Aberdeen

02 Organizations with real time data visualization achieved a 15% increase in cash generated from operations." – Aberdeen

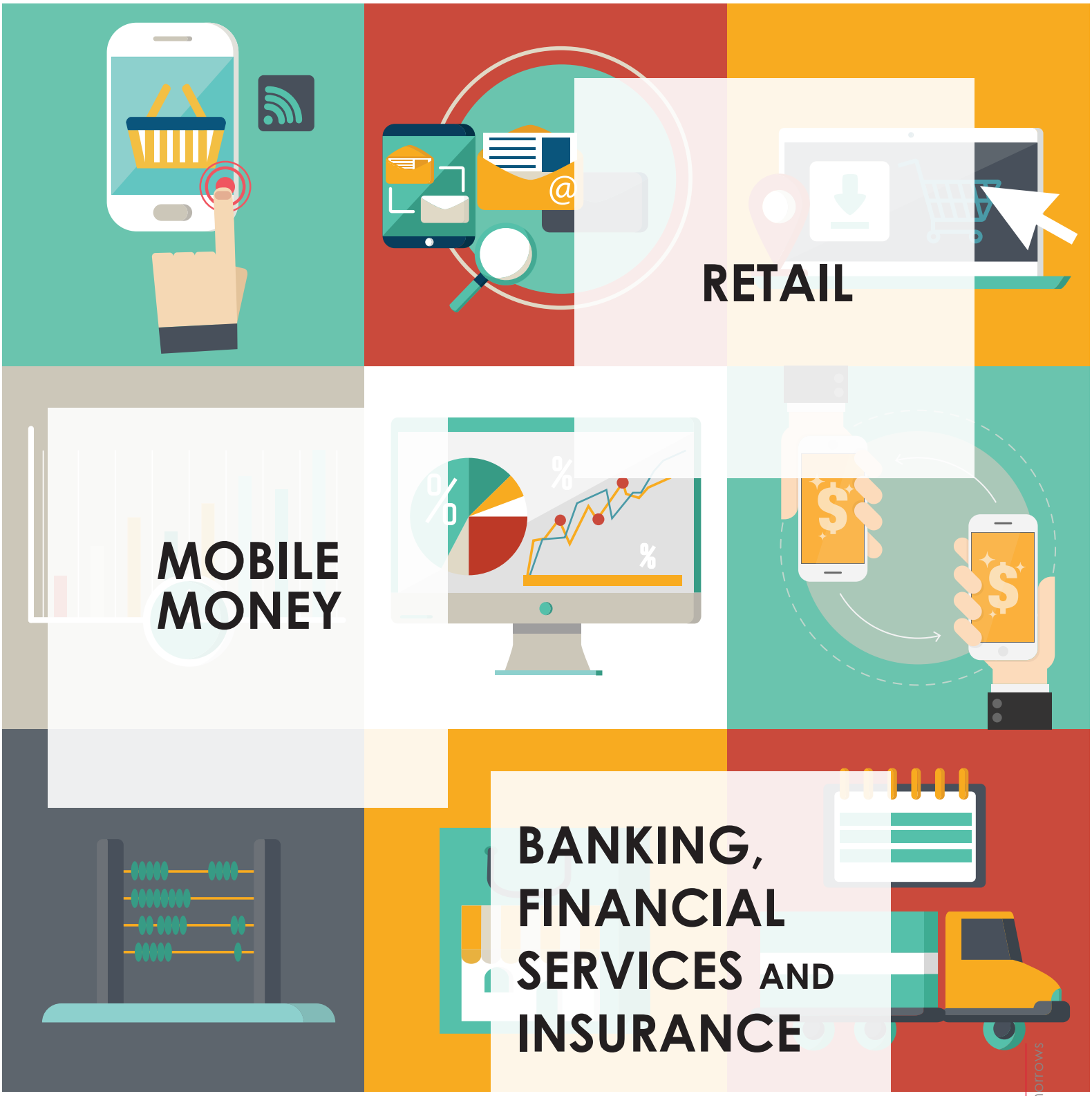
03 "Visual data discovery tools will be growing 2.5X faster than the rest of the BI market; investing in this enabler of enduser selfservice will become a requirement for all enterprises by 2018." – IDC

04 Ninety one percent of business decision makers predict the demand for data visualization tools on mobile devices will increase in the next five years." – SAP

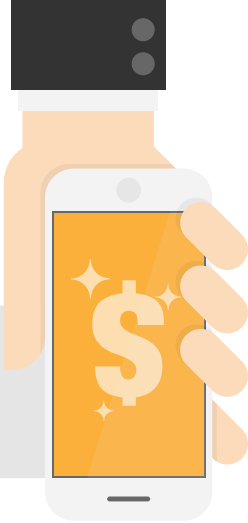
05 "On average, those using data visualization tools report it would take an average of nine hours longer to see patterns, trends and correlations in their company's data without data visualization." – SAP

06 "Organizations with realtime visualization are able to obtain critical information within the decision window 78% of the time, or 22% more often than organizations without realtime visualization." – Aberdeen

USE CASES

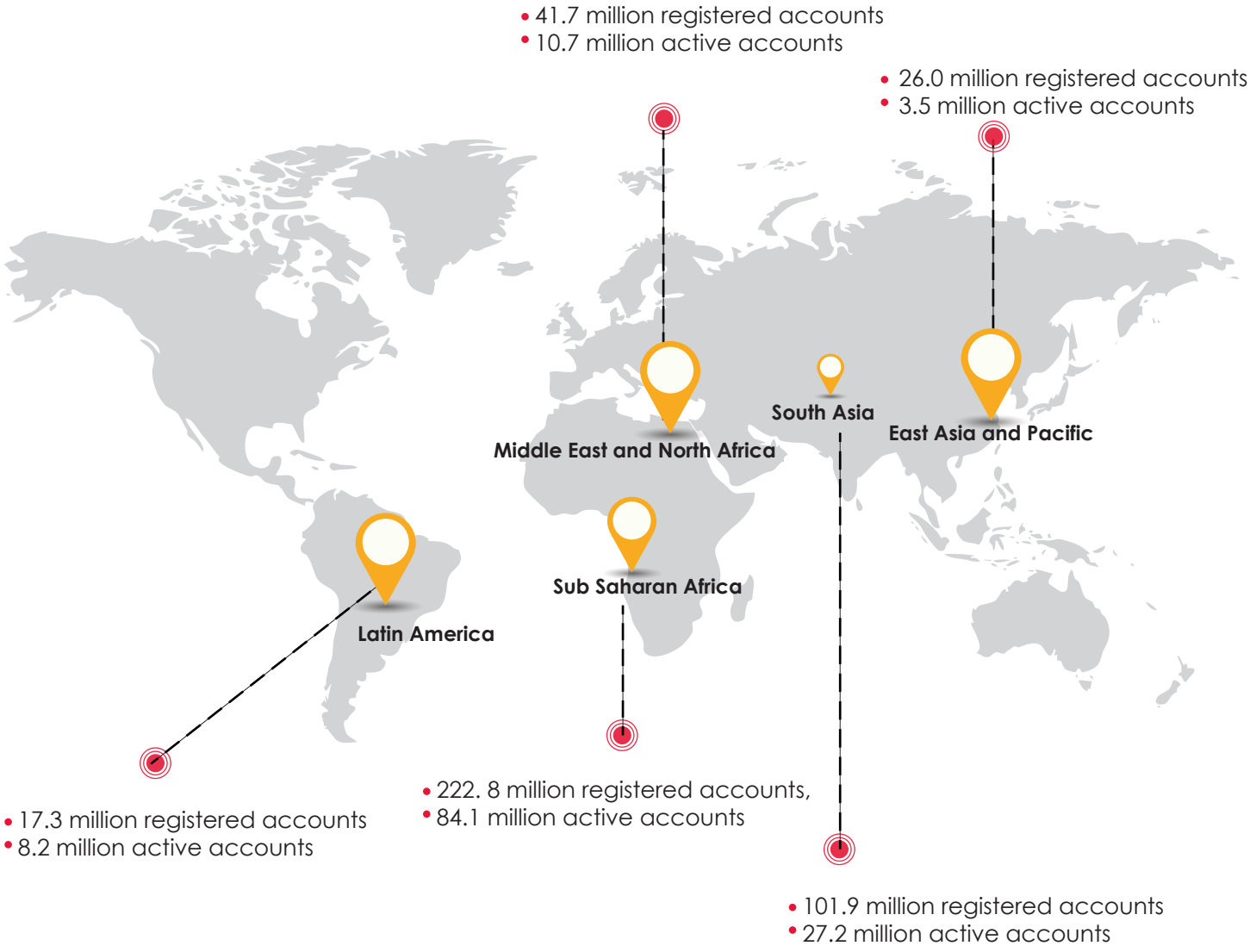

RETAIL
MOBILE MONEY
BANKING, FINANCIAL SERVICES AND INSURANCE

MOBILE MONEY



Number of registered and active (90 day) customer accounts by region...

December 2015



The numbers given above is able to convey the existing gap between the total number of registered mobile money users and the number of active mobile money users.

Because different customers have different needs and preferences, it is impossible to market a mobile money service that addresses everyone's need adequately. Therefore, there is a need to take a calibrated approach as the customer matures across the product life cycle.

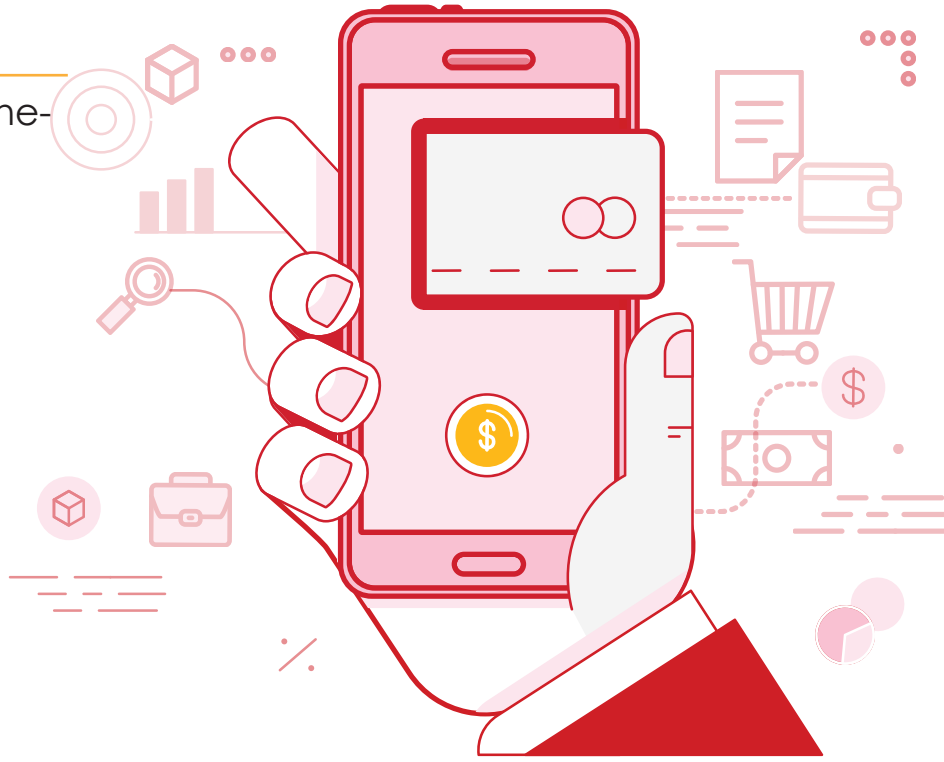
A typical mobile money life cycle consists of the following phases –

INTRODUCTION 1

Slow adoption because a majority of customers are unaware about the product or simply cautious.

Strategy

Mass marketing through above-the-line or below-the-line



GROWTH 2

This stage is characterized by rapid growth, high familiarity with the product, overall boost to adoption. This sets the stage for more competition in the market, driving price downwards.

Strategy

Segmented Marketing

Segmentation helps the operator develop a marketing strategy effectively drives customer activation.

The most common first step in segmentation is identifying the groups of customers who most need the product being offered. For mobile money transfer, this means identifying consumers who are already transferring money on a regular basis.

After segmenting the universe of potential customers operators select the priority target market where they will focus. Selecting a target market helps operators communicate effectively with consumers and position the service based on their needs and preferences.

MATURITY 3

In this stage, the market becomes saturated, with competitors competing on price. In this stage there is a need to differentiate the product through incentives, services, and other benefits.

Strategy

Event based and Contextual Marketing

Customer promotions (offering them bonuses or discounts for performing certain transactions) can be an effective marketing tool to incentivize behaviour.
In general, operators have found that promotions are more effective to drive repeat use than first time use. For example, customers are sent notification that they are running out of their data/voice balance and would they like to top-up? The user completes the transaction on their mobile instantly, availing of any discount which may be available.
Big data analytics running in the background matches customer profile against other customers with similar behaviour in order to churn out the best possible offer.

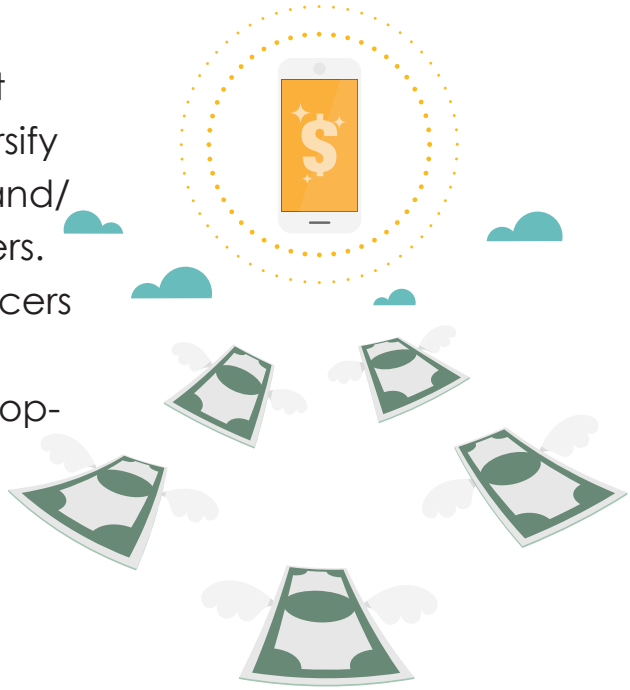
DECLINE 4

Revenue drops considerably, calling for alternate or superior products that would keep the users interested.

Strategy

Diversifying

After attracting a loyal customer base, the most successful mobile-money deployments will diversify the product offering to attract new customers and/or increase the transaction volume per customers. When M-Pesa started to catch on in Kenya, grocers and other merchants began accepting M-Pesa payments. In 2010, Safaricom began offering crop-insurance products to M-Pesa users.

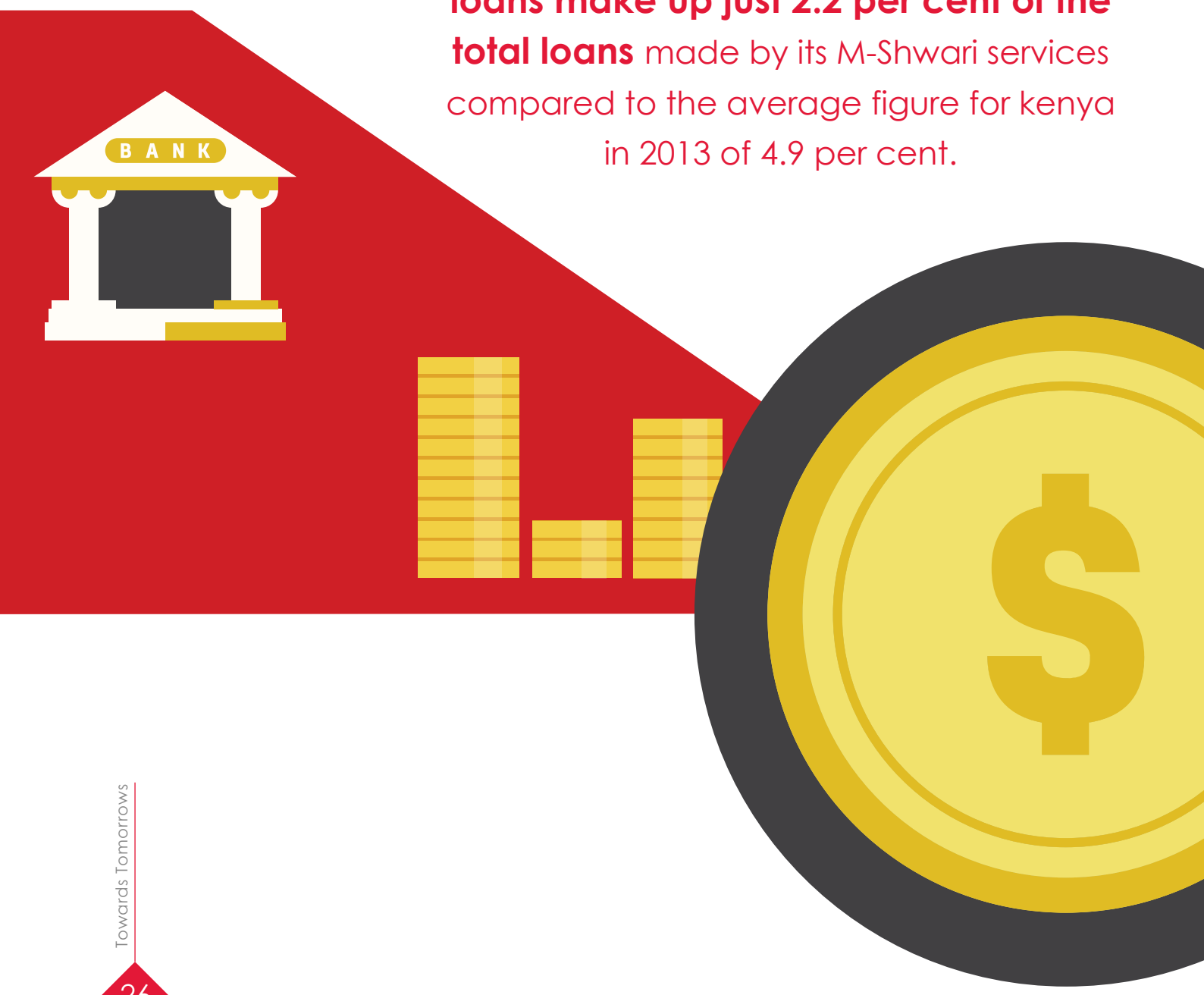


WITH
BIG DATA
ANALYTICS WE ARE
GETTING CLOSER
TO A FUTURE **WHERE**
PEOPLE WILL EXPECT
ACCESS TO WHAT
MATTERS TO THEM
BY SIMPLY PROVING
WHO THEY ARE.

BANKING, FINANCIAL SERVICES AND INSURANCE

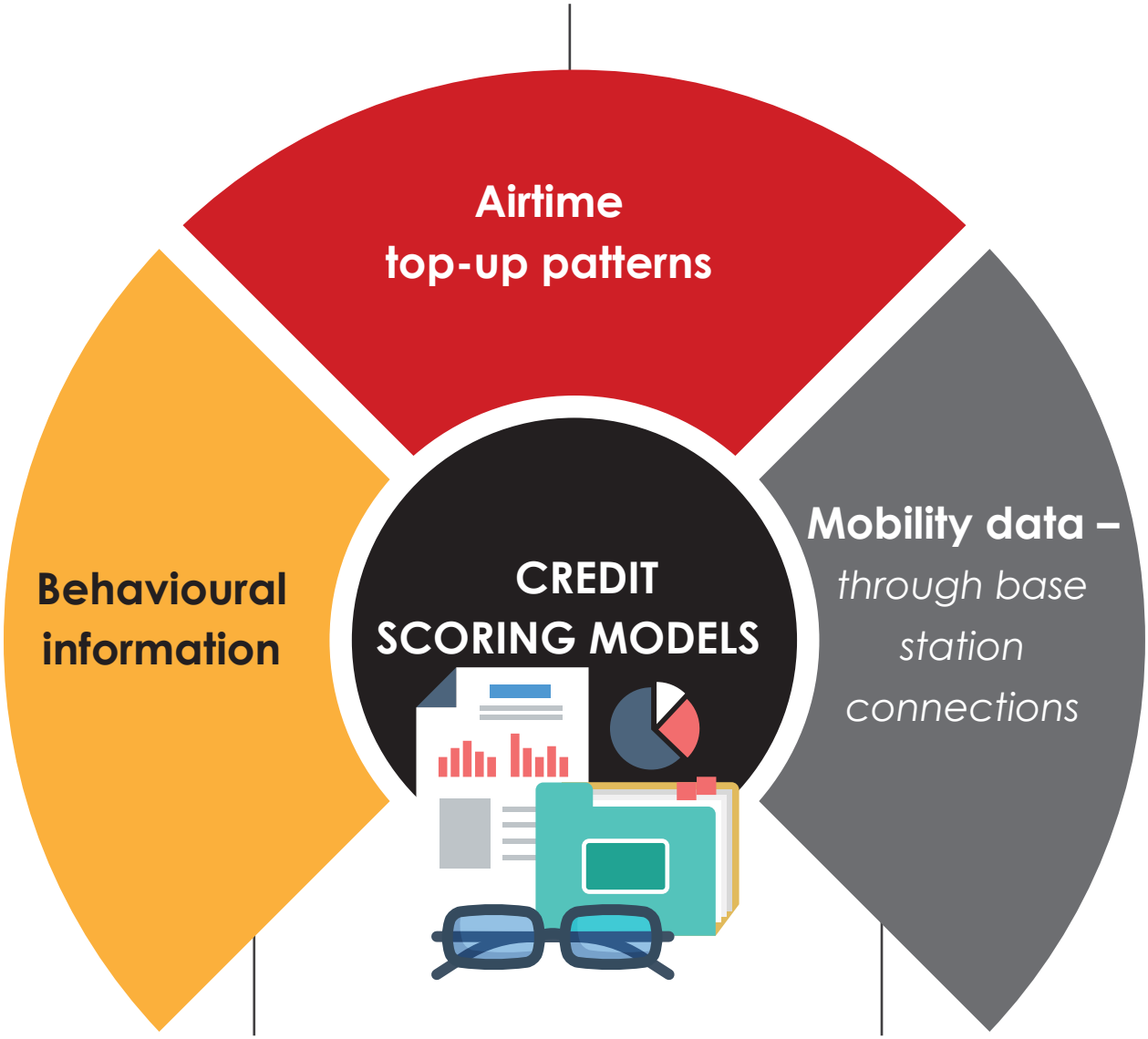
Historically, banks and micro financial institutions lack the necessary data on the user's creditworthiness that is necessary to gauge the user's ability to repay. Telecom operators are in a better position, as they have the customer's data necessary for designing credit scoring models.

Safaricom says that **non-performing loans make up just 2.2 per cent of the total loans** made by its M-Shwari services compared to the average figure for kenya in 2013 of 4.9 per cent.



Salaried *– Customer tops up one large amount at the same time every month*

Informally employed *– Tops up small amounts very frequently*



Stable Paying Job

Customer moves from one place to another during weekdays

High paying job

Customer travels abroad on weekends can be an indicator of high or steady income levels

Patterns like calling patterns, prepaid charging, usage patterns, can be used to observe the change in behaviour and thus help in determining credit worthiness

- *AirTime Credit – Low risk,*
- *Secured asset (based on transactional history and mobile locks)*
- *Unsecured loans – Transactional data, and provided by mobile money*

RETAIL

Telecom retailers typically have access to a significant volume of data. Generated across the supply chain and at diverse customer touch-points, this data is further multiplied via digital customers and social media channels.

However, merely aggregating a vast amount of structured and unstructured data isn't likely to translate into healthy bottom-lines. The idea is to extract actionable insights from the data pile.

Problem statement

A disconnect between the retailer and the customer's journeys

Retailer Journey

On **contextuality** criteria - retailers score only **30 per cent**

On **convenience** the retailers score only **32 per cent**

On the criteria of **consistency** retailers score only **49 per cent**

- IBM 2016 Global Customer Experience Index

Customer Experience

A customer is **4 times more likely to buy** from a competitor if the problem is service related versus price or product related

-Bain & Company

86 per cent of buyers will pay more for a better customer experience but only 1 per cent of customers feel that vendors consistently meet their expectations

-Forbes

67 per cent of customers mention bad experiences as a reason to churn

-Esteban Kolsky

Absence of a seamless omni-channel experience

89 per cent of companies with the strongest omni-channel customer engagement strategies retain their customer *-Aberdeen group*

Engaging with customers lead to **40 per cent** more revenue per person

-Bain and company

89 per cent of customers have stopped doing business with a company after experiencing poor customer service

-Rightnow Customer Experience Impact Report

By 2020, the demand for an omnichannel customer experience will be amplified by the need for nearly perfect execution

-PricewaterhouseCooper

90 per cent of customers expect consistent interaction across channels

–SDL

64 per cent of customers want personalized offers from retailers*-Salesforce.com*

Only **19 per cent** use personalization in their marketing, even though **74 per cent** of marketers state they know it improves customer engagement

-Econsultancy

52 per cent of customers are willing to switch if a company doesn't make an effort to personalize communication with them

-Salesforce.com

80 per cent of marketers are failing to personalize their marketing efforts

- VentureBeat

Over **78 per cent** of consumers will only engage if they have been personalized to their previous engagements with the brand

- Marketo

THE ROLE OF BIG DATA ANALYTICS

Uncovering Actionable Customer Insights

Big data analytics enables telecom retailers to uncover a mine of information pertaining to a customer's behaviour and usage patterns. This further enables them to push contextual, relevant and personalized offerings in a timely manner and at any point in the customer's journey.

This process is usually based on where that customer stands from a behavioral point-of-view. By examining certain factors, such as the amount of time the customer has spent on the network, usage patterns, etc, the retailer can reach out to the customer via an SMS (or other ways) that highlights the latest offerings they can avail of. Moreover, by deploying big data, all of the retailer's data is turned into actionable and behavioral insights. These are further used to ensure that the appropriate treatment (in terms of marketing) is applied to each customer at the right time. Essentially, big data helps the retailer to "plot" events on a timeline for each customer, which are then analysed and familiar patterns are highlighted, in order to predict the customer's behaviour.

Ensuring Retailer Loyalty

Big data analytics can be leveraged to examine a retailer's behaviour. Thereafter, personalized offers and incentivization schemes can be developed, to ensure enhanced and improved retailer loyalty.

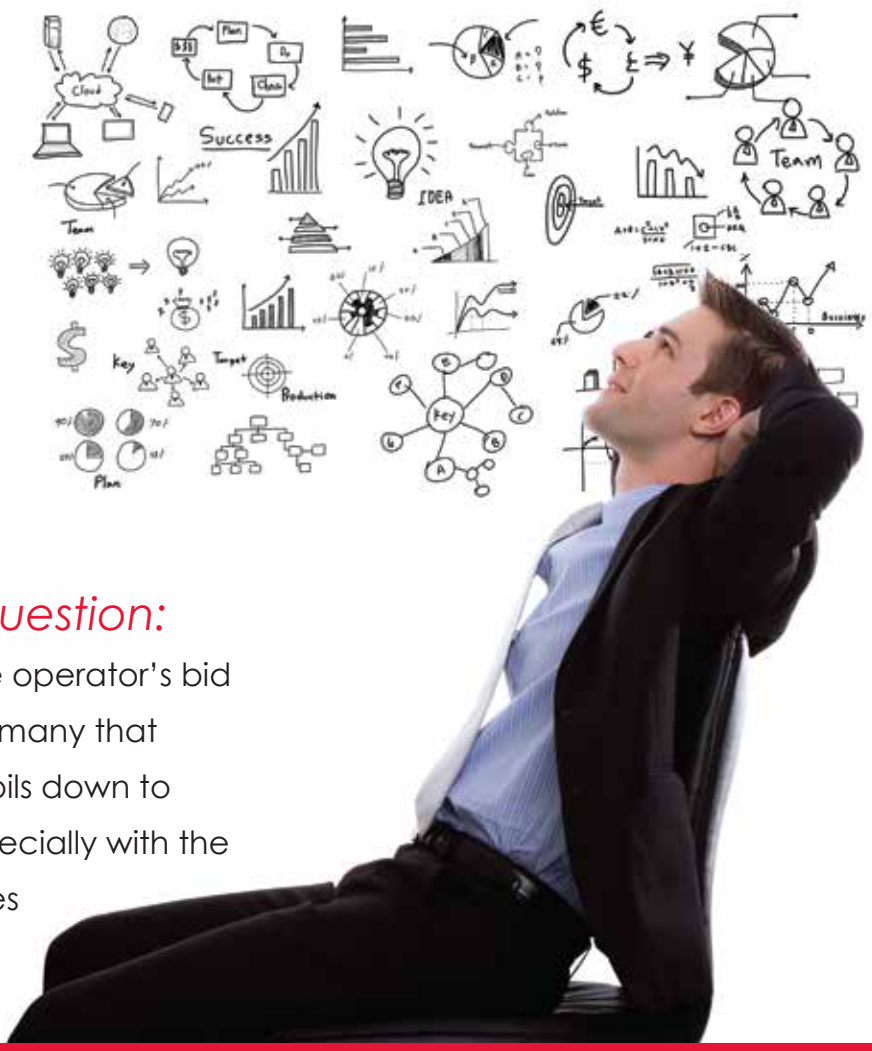
Enhancing Channel Productivity

A "top-down" approach is usually adopted, with regard to the sales channel. This implies that targets are identified at the operator's level and are expected to be absorbed by the channel's various elements across the organization. However, region-wise analysis of past performance and trends can improve the accuracy of predicting future sales potential and help the operator set channel targets accordingly. The bottom-line is an optimally utilized sales channel, with relevant targets and adequate incentives.

CONCLUSION

Today's operators have the data as well as the tools to mine valuable insights on customer behaviour.

However, these insights without action are just a waste of operator's big data investments. Therefore, there is a need to set a clear goal, invest accordingly and measure the results against benchmarks.



This inevitably leads to the question:

what is/are the benchmarks to measure operator's bid data analytics spends? While there are many that come to mind such as QoE, QoS it all boils down to revenue and customer experience, especially with the operators outsourcing non-core activities to managed service providers.

In this e-book, we have provided examples on how operators can leverage big data analytics for enhanced revenue and customer experience.

We have also touched upon new usage cases in big data analytics like mobile money lifecycle, BFSI and retail. Finally we leave you with a roadmap for big data analytics investment that help you avoid any pitfalls that come with hasty deployments.

Investment vs Use Case

Don't get enamoured with the technology, concentrate on the problems you are trying to solve with it.

Information vs Actionable Insight

- Business satisfaction with analytics went down 21% between 2014 and 2015 despite big investment in analytics
- Forrester reports only 29% firms connecting analytics to action
- Most analytics solutions are providing more information not insights
- Data, information and actionable insights are not synonymous

Need vs Relevance

- If insights aren't timely they are useless to drive the desired behaviour
- Insights have to be delivered to the right person in the right setting to drive the desired results

Cloud vs On premise

"Expectations are now turning to the cloud as an alternative deployment option, because of its flexibility, agility and operational pricing models."

– Gartner

- Move to cloud to reduce spend on data centers *(data-as-a-self-service)*
- Insights available to people below C-Level empowering employees from insights gained from structured as well as unstructured data.


Cloud
Plan
Do
Check
Act
$$$
Success
IDEA
Team
Production
Key

Mahindra COMVIVA

THE BUSINESS OF TOMORROWS

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