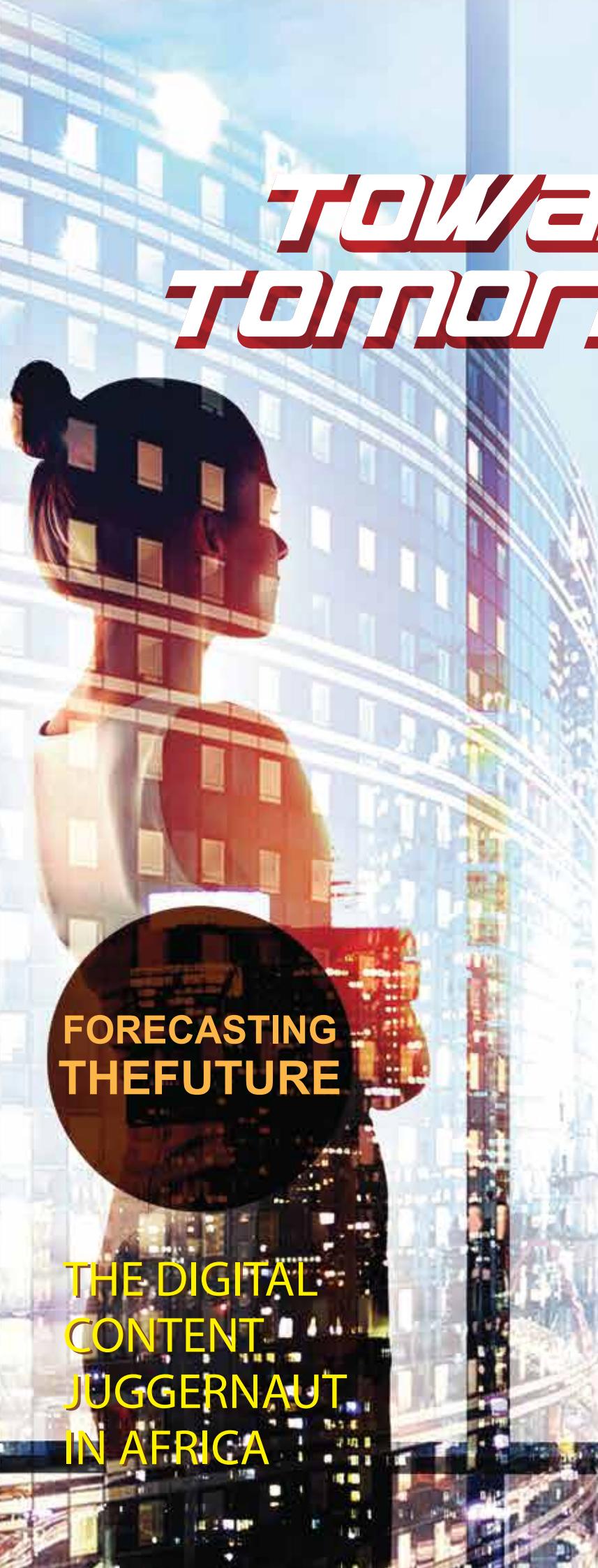


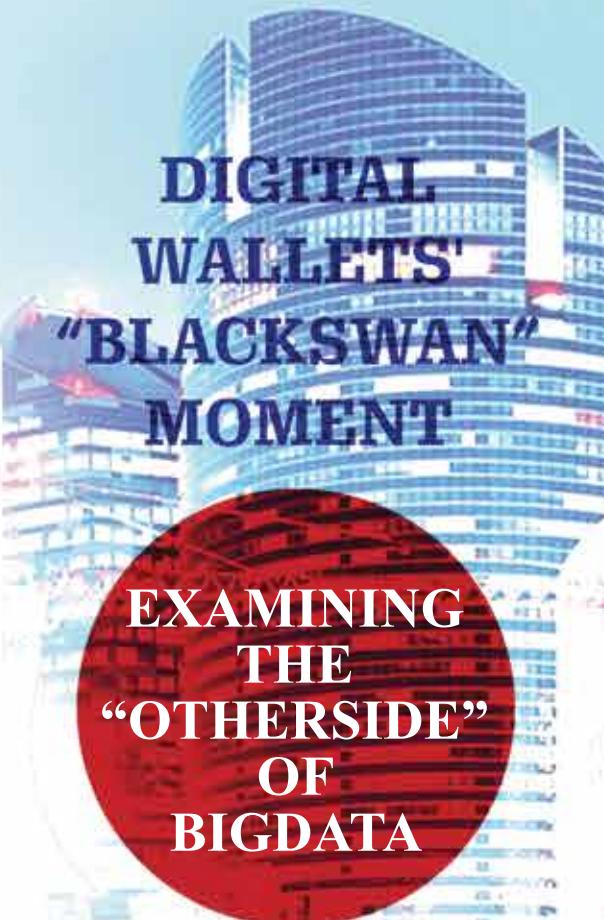
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ISSUE 2, VOLUME 1

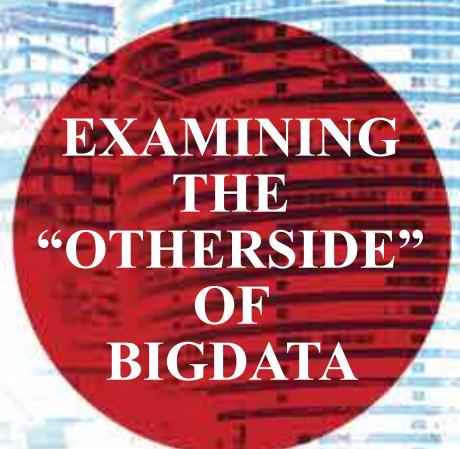


**FORECASTING
THE FUTURE**

**THE DIGITAL
CONTENT
JUGGERNAUT
IN AFRICA**



**DIGITAL
WALLETS'
“BLACKSWAN”
MOMENT**



**EXAMINING
THE
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EDITORIAL

What does 2017 hold for the global telecom space? Quite a bit, if one considers the mad scramble that ensued in end-2016. I, obviously, refer to the time-honoured practice of every analyst worth their salt rushing to put forward their two cents. But, here's the catch-how does one make sense of the clutter? To believe or not believe, that is the question!

Permit me to put in my (very humble) two cents. Personally, I am of the firm opinion that one cannot really go wrong by choosing to abide with the GSMA Intelligence's views on anything mobile. So, keeping in line with this time-honoured practice, here's a brief snapshot of what may come to pass in telecom this year:

The Advent of the Platform Economy: Messaging applications were just the beginning. The platform economy will use smartphones, softwares and open application programming interfaces (APIs) to create and scale new digital marketplaces for a huge range of services and products.

The Rise and Rise of Messaging Platforms: The IP messaging application customer base will continue on an upswing this year. The global user base is already approaching the 3 billion mark. Growth will continue with the proliferation of low-cost smartphones.

Are Cars poised to be the new Smartphones? Value in automotive is shifting to software and services. Cars are emerging as new platforms to offer a variety of content and services, ranging from infotainment to telematics. These trends may accelerate with the rise of electric vehicles, which may prove a catalyst for further disruption of the automotive sector. Up to two thirds of new cars sold by 2025 are expected to be connected (built-in or smartphone-based).

It doesn't end here, of course. GSMA has, as expected, a lot more to say on the subject. For now, though, a brief snapshot ought to be enough. After all, given the ups and downs the sector goes through, it should come as no surprise if a major twist occurs at some point down the line (year).

You heard it first here, though!



MONISHA SAHU

Senior Group Manager
Corporate Marketing

FORECASTING THE FUTURE

These are busy times for the global telecom space and 2017 promises not to be an exception. Mahindra Comviva's leadership team shared their views on the trends expected to make a splash in their respective portfolios. Excerpts...

ADITYA DHRUVA

Chief Technology Officer and Head, Messaging and Broadband Solutions



The mobile messaging, internet and broadband spaces are likely to witness several significant trends in 2017.

MOBILE MESSAGING

- Enterprise-Customer Engagement over Multiple Channels

One can expect greater engagement with enterprises via chat applications. Meanwhile, the deployment of A2P SMS by enterprises will continue to be on an upswing.

- Monetization of Application-to-Person (A2P) SMS

By end-2017, 23 per cent of global operators would have invested in next-generation SMS revenue assurance platforms. A2P is already monetizing over-the-top (OTT) communications through authentication. This, in turn, presents mobile operators with a ready-made, revenue-generating opportunity by capitalising on already deployed messaging infrastructure.

CHAT APPLICATIONS

Contextual commerce and chat bots will rule in 2017: An enterprise's ability to interact with consumers on chat applications allows consumers to purchase goods, contact customer care and even access information services on their chat applications. It is clear that the chat application has moved well beyond being a pure communications platform, to becoming a digital hub for the consumer's life.

INTERNET AND BROADBAND

- 2017 will be the year of enterprise digital engagements over data channels. This will enable enterprises to use data to incentivize, reward and promote services. Data will soon become the next form of currency.
- Global network providers are likely to plan for a virtualized future. Network Functions Virtualization (NFV) will finally arrive.
- Forward-looking operators will deploy Machine-to-Machine (M2M) communications and a framework for the Internet of Things (IoT). They would also chalk out a blueprint to manage IoT subscribers.



ATUL MADAN

Senior Vice-President and Head, Digital Services



The creation of relevant digital content and efficient delivery of the same is likely to take centre stage in 2017. Moreover, ensuring relevance of digital services will not only engage and serve customers, but will also help to monetize the overall ecosystem.



AMIT SANYAL

Vice-President, Consumer Value Solutions



This will be an interesting year, wherein customer value management (CVM) will be a key focal point for telecom operators globally. Another pivotal focus area will be driving data consumption, in particular, 4G. Meanwhile, customer value management through retail and channel sales will emerge as a parallel focus area to traditional CVM programmes.

The average revenue per minute of telecom operators will increase via cross-and-up sell, instead of driving vanilla usage of analytics. Interestingly,

predictive analytics will be in the spotlight, whereas prescriptive and descriptive analytics are slowly but surely becoming the norm. A paradigm shift will take place, wherein the CVM space will focus on banking and retail in 2017.

In addition, CVM's scope will not be dependent on an operator's key performance indicators alone. Customer profiling will play a pivotal role as well. Lastly, operators will increasingly begin to focus on incremental innovation, as opposed to "big bang" changes.



ANURAG SRIVASTAVA

Senior Vice-President, Managed and Support Services



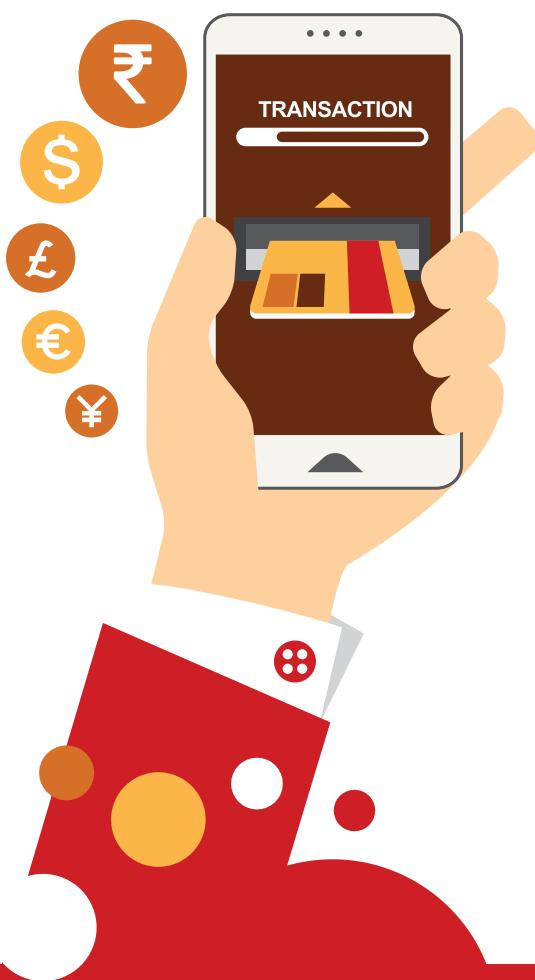
In today's connected world, people depend extensively on telecom networks. In this context, operators are under tremendous pressure to maintain quality of services and promote end-user loyalty. This, in turn, has created demand and a positive flux for executing traditional tasks without any room for errors.

Managed services will continue to expand, as enterprise customers turn to service providers for end-to-end network solutions and services. The traditional managed services portfolio has evolved over time to give way to managed digital services and managed analytic services. Given the plethora of data being generated each second, making sense of this data and converting it to meaningful information is the biggest challenge before customers today. With increased pressure and rapidly declining average revenue per user, it is vital for operators to chalk out new ways to monetize services and reduce dismissible errors and costs. Proactive and predictive analytics will be able to solve several issues, before impacting everyday business. This can be achieved by opting for intelligence provided by new age managed services. Operators can thus save a significant amount of the cost incurred today and improve customer experience manifold.

Meanwhile, offshoring is on the upswing. The number of multi-country and multi-continent arrangements is increasing and direct sourcing is on the rise. This has provided an opportunity for service providers to differentiate themselves from the competition, by introducing innovative solutions and adopting best practices from allied industries. The challenge is no longer to identify what or how the future could be, but it is about how to get there, and drive the change. A cognitive approach towards services, automation, predictive analytics and auto diagnostics will be the key drivers for 2017 and beyond.



DIGITAL WALLETS' "BLACK SWAN" MOMENT



Is cash set to abdicate its throne in India? It wouldn't be an understatement, especially given the recent furore over demonetization in the country!

Without trying to sound too ironic, the government's move to demonetize 500 and 1,000 rupee banknotes has, without a doubt, had profound and far-reaching implications. It is a courageous move (in my opinion, at least) towards tracing and eradicating black money and counterfeit currency. Having said that, however, let's not forget that it is merely the tip of the iceberg.

How? Well, from our perspective, this development has had an interesting impact on the country's digital payments space. Almost 86 per cent of India's currency circulation was reduced to mere paper after November 8, 2016. Yet, digital wallets and financial technology companies laughed all the way to the bank. Naturally so, as customers turned their attention to digital payments almost immediately, thereby side-stepping the serpentine queues outside banks and automated teller machines. Here's why this is significant-up until 2015, 78 per cent of all customer payments in the country were carried out via cash, as per a joint report by The Boston Consulting Group and Google India. Clearly, cash was the king in India!

Things have, needless to say, changed rather dramatically since then. Let's take a closer look at the numbers to understand how. Shortly after the announcement, digital payments company, Paytm, registered over 7 million transactions worth Rs 1.20 billion a day. This propelled its gross merchandise value to over \$5 billion. Of course, every digital payments company in the country left no stone unturned to leverage this opportunity to the fullest. And, they succeeded quite admirably, if the numbers are anything to go by. To cite another example, MobiKwik also witnessed a 200 per cent increase in downloads and added over 200,000 customers on a daily basis! That apart, the company is well on its way to on-boarding 1 million merchants in a span of 45 days. No small numbers, these! As a brief side-note, I feel that it is pertinent to highlight the example of Akodara, a village situated 60 miles from Ahmedabad. What makes this example so special is the fact that it is India's first digital and cashless village. Most of the 1,200 strong population there execute daily transactions-value notwithstanding-through digital payments. Of course, the intent of this piece isn't to wax eloquent on how these companies managed to set their cash registers ringing, in the aftermath of demonetization. Instead, the question is-is this a short-term surge or will the Indian consumer's behaviour towards digital payments undergo a sea-change?

In my opinion, the latter statement is most likely true. Here's why—the aforementioned joint report by Google and The Boston Consulting Group states that by 2020, the size of the digital payments industry in India will be **\$500 billion**; contributing 15 per cent to India's gross domestic product. By 2020, non-cash contribution in the consumer payments segment will double to 40 per cent and Indian consumers, are 90 per cent as likely, to use digital payments for both online and offline transactions. The drive to demonetize is more than likely to fuel this growth. Meanwhile, another joint report authored by The Associated Chambers of Commerce of India and RNCOS, substantiates this statement. According to them, the mobile payment transaction volume in India is set to witness an over 90 per cent increase each year, over the next five years. The transaction volume is expected to have a compound annual growth rate of more than 90 per cent to reach **153 billion** by 2022. Here's the interesting bit—it has been valued at **3 billion** this year. Quite a jump, this!

In short, the overall picture looks quite rosy, with a strong case for digital payments. Now, let's break down the argument further. For India to become a "cashless economy" through and through, the argument must be examined from two aspects—the customer and the merchants, respectively.

For the former, a plethora of digital payment mediums are available today, apart from digital wallets. Broadly, these include (but aren't limited to) bank cards, the Aadhar-enabled payment system and the Unified Payment Interface (UPI). Another interesting initiative is the Prime Minister's Jan Dhan drive, which has boosted banking penetration in India. For a holistic picture, though, bank-backed wallets should be used to fill up the remaining gaps. These seem viable, given that they're cost effective, easy to adopt and can be rolled-out rapidly for unbanked consumers.

Of these, in my opinion, UPI is likely to emerge as a game-changer in these times. Why? Well, in a nutshell, UPI is a payment infrastructure that permits mobile banking or wallet customers to transfer money to customers of any other bank and pay merchants. It also permits customers to receive mobile payments without disclosing the details of their bank accounts. In fact, it even addresses a very critical aspect—customer experience. UPI essentially ensures a seamless transaction and reduces the time taken for the same. This is because the customer is required to only enter a single identifier, i.e. a virtual payment address.

But, don't take my word for it. In so far, 28 bank apps in the country have UPI facility. It garnered **175,000** active customers in just a week. Enough said.

Now for the merchant's perspective. Traditionally, India has never been deemed as a point-of-sale (POS) friendly country. As per data released by the Reserve Bank of India, the number of online POS machines, as of August 2016, stood at **1,461,672**. Quite dismal, especially given the kind of customer numbers one usually considers! Now, though, the situation is expected to change. Interestingly, as per news reports, merchants are now approaching banks to obtain POS machines. Not surprising, considering the kind of impact the demonetization drive would have had on their business! Permit me to cite an example from our own business—we witnessed an increase in the adoption of mobile POS, where our customers have reported a **500** per cent increase in order for POS devices. A small step, no doubt, but a solid one, nonetheless!

All in all, it looks likely that digital transactions will become the de-facto payment mode in India. Cashless times beckon, is India ready?



EXAMINING THE "OTHER SIDE" OF BIG DATA

There's no doubt about it-telecom is a numbers game, where data is the king. Take note, though, data doesn't merely refer to information pertaining to subscribers, average revenue per user, et all. It is, essentially, the entire gamut of numbers generated by the global telecom space on a daily basis.

To illustrate, industry analysts have estimated that a copious **2.5 quintillion bytes** of data pertaining to individuals, places, locations, processes, et all, is net every day. This data comes from multiple sources, such as sensors used to gather climate-related information, posts on social media sites, digital pictures and videos, purchase transaction records, cell phone GPS signals, the list is endless. That's one side. On the other, **7,857,452,730** (and counting) mobile connections were counted globally (by GSMA Intelligence for November 2016) and telecom operators net revenue of **\$1.06 trillion** in financial year 2015. In other words, number crunching (albeit a run-of-the-mill process), is equally essential.

There is a catch, though. Operators would do well to remember that merely aggregating vast amounts of structured and unstructured data will NOT set the cash registers ringing. What will, though, is a clear-cut plan on how to extract actionable insights from the data pile. This is where (and why) big data steps in. Now, without running the risk of repeating myself, (for blogs on big data and analytics do tend to get repetitive) let me begin by saying that deploying these tools isn't just a necessity for any operator, it is a norm. Here's why-careful and thorough analysis of this diverse and

unformatted digital data can help operators unearth new revenue streams, as well as gain a mine of insights into a customer's behaviour. Going a step further, operators can scrutinize and track conversations on social media to ensure no negative publicity is coming their way. In fact, the possibility of creating and supporting various hypotheses on the business becomes a reality for these players. How? Well, simply put, it requires operators to deep-dive into this unstructured pool of information to analyze it against existing business warehouse data in an accurate and concise manner.



This is, of course, merely the tip of the iceberg. But, the focus of this blog isn't to expound the benefits of big data on an operator's business. While that is, of course, a given, it isn't the only aspect. What I am alluding to is how big data and analytics can be effectively leveraged by telecom retailers to push contextual, personalized and relevant offerings to customers in a timely manner and at any point in their journey.



Why the focus on retailers? Well, they are an important, if oft underestimated part of a customer's (especially prepaid) telecom experience. In fact, it wouldn't be erroneous to state that a prepaid subscriber's journey is far from simple and very patchy. Here's how typically, operators do their bit by sharing the best and most relevant offers available with subscribers and retailers alike. And that, unfortunately, is where the link ends. Why? Well, because in this entire process, there isn't any sync between the retailer and subscriber. For example, the operator shares the details of Plan A with the subscriber and the details of Plan B, C and D with the retailer, along with the entailed commissions (of course). The subscriber, meanwhile, finds Plan A to be in line with their requirement and approaches the retailer so as to purchase it. Only to find that the retailer is completely unaware of the plan in question, let alone what kind of commission comes with it! In other words, the entire experience boils down to low awareness and thus low profit for the retailer.

Now, let's step back to gauge the larger picture. Operators are, by and large, a bit wary of prepaid subscribers. Why? Well, to begin with, the level of uncertainty is higher, compared to their post-paid counterparts. The latter receives a bill every month and operators have full, detailed profiles of each customer they're serving. All in all, a win-win proposition for both. It isn't that cut-and-dry with prepaid customers. It is often cited as the segment operators know the least about, with good reason! The operator is not interacting with this segment on a monthly basis. These players are neither sending a bill, nor have adequate information to chalk out a detailed profile of these customers. The last point holds true, especially in the developing world, where customers can purchase inexpensive SIM cards at various retail outlets (such as grocery stores, etc). Having said that, however, let's not forget or underestimate the fact that these subscribers unknowingly impact an operator's revenue, via decisions pertaining to when, where and how much they top-up.

So, what can big data and analytics do to simplify a retailer's existence? Well, to begin with, it can help these players figure out the kind of offering they should market to each individual customer at any given point in time. This will, of course, be based on where that customer stands from a behavioral point-of-view-i.e.-are they a new customer? When did they last top-up their account? Is their balance sufficiently low to target them? The next step is to reach out to the customer via a simple SMS

(or other ways) that highlights the latest offerings they can avail of-all in a relevant, timely and contextual manner, of course!

What makes an offering "contextual"? Well, 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. Let's break it down further. Essentially, all available data is explored and analysed thoroughly to create an overview of the customer (of sorts). For example, a customer's financial transactions such as purchases, spending, balances, etc. are scrutinized and combined with call data records across voice, SMS, data, video, etc. With this information, the retailer is able to gather that the customer (for instance) purchased an international calling voucher and made five calls to London and topped-up their prepaid account. 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.

Of course, let's not forget one important aspect. The marketing messages sent out aren't designed to overwhelm the customer. The idea isn't to design messages, target individuals and then relentlessly bombard them with a series of messages, hoping that one will find its mark. Big data helps the retailer to identify a set of parameters, pertaining to the customer's usage patterns, which helps the player model the different messages, the timing, etc, in a selective manner. The aim is to create a sample size of customers to filter and determine what works and what doesn't. Naturally, the ideas that hit the bulls-eye are tailored as per the target audience base.

This, in a very **360** degree overhead format, is how big data can be used to make a retailer's business easier and more financially rewarding. Please note, though, there is no "one size fits all" approach to deploying these tools. Having said that, don't underestimate the mine of information these tools can uncover! That is, of course, if one is interested in enhancing customer experience management and real return-on-investments!

THE DIGITAL CONTENT JUGGERNAUT IN AFRICA

Africa has, for all intents and purposes, emerged as a poster-boy of the global economic market. It has silenced its critics in several fields, including (but not restricted to) banking, education, agriculture, activism, etc.

The continent's digital content space is no different. The segment has, over the years, grown by leaps and bounds, all while emphasising on the adage, "Content is King". To illustrate-according to Statista, revenue from the digital media space in Africa and the Middle East is currently pegged at **\$882 million (2016)**. The largest segment within this market is video games, with market volume of **\$522 million**. Equally sought after are online television, video streaming, gaming and social media. By 2019, as per Ovum, this order is likely to change to mobile based e-commerce and health and video applications.

So, what is driving this juggernaut? In a nutshell, a combination of rapid smartphone uptake and high demand for fast and accessible data are responsible. As is well known, the smartphone has made quite a splash in Africa. This is, as per industry reports, largely owing to a rapid decline in the average selling price of these devices. The bottomline is this-the availability of sub **\$100** smartphones implies that customers for whom devices such as desktop computers, laptops and tablets were financially out of bounds earlier now have the option of accessing data through smartphones. The result? Mass market adoption of smartphones, of course! Moving on to the larger picture, this is expected to have a three-fold impact on smartphone availability-to the tune of **540 million** devices in 2020. Meanwhile, the number of mobile broadband connections in Sub-Saharan Africa is also set to increase from **24** per cent in 2015 to **57** per cent by 2020.

It stands to reason that the increase in smartphone demand will lead to a spike in the demand for fast and accessible data. This is overtly true, in Africa's case, at least. According to industry reports, African countries have been developing high performance networks with at least **41** countries already using commercial 3G



networks, and 23 countries having access to 4G networks. Going forward, by 2020, about three-quarters of all mobile connections will be on 3G or 4G, while Wi-Fi (another means to access the internet) is being offered free in a number of towns and cities.

Clearly, then, the explosion of digital content in Africa ought to be no surprise at all! For a clearer picture of what may be in store, here's a quick laundry list of content that is likely to shape the industry, going forward:



VIDEOS

As per industry reports, the video segment in Africa is expected to witness a 45 per cent compound annual growth rate (CAGR) between 2015 and 2020. Of this, video-on-demand is beginning to hog the spotlight, with close to 100 platforms entering this very lucrative space.



EXISTING GREY AREAS

Now for the flip side. Despite the very rosy picture portrayed by the space, it does have a fair number of grey areas which are yet to be tackled in a satisfactory manner. I allude to the issues of the lack of locally relevant content, high total cost of ownership, low literacy rates and the quite substantial gender gap across the continent. Overall, though, the argument still stands-Africa is in tune with technology. This isn't a distant dream propagated by armchair analysts anymore, it is an affirmation. The rest of the world, are you listening?

GAMING



It will come as no surprise that the continent's youth segment is largely responsible for pushing gaming. This, too, is driven by the availability of games that come with a "made in Africa" tag. Essentially, these offerings are both culturally relevant and available on a variety of devices. It doesn't end there, though-going forward, as per Statista, mobile gaming in Africa and the Middle East has registered double digit growth, from \$228.6 million in 2015, slated to jump to \$261 million in 2016. Age-wise, the 25-34 age group form the largest fragment of the 23.8 million global mobile gaming community while the 45 years and over segment are the least. Overall, the segment, as per Price Water House Coopers, is worth at about \$217 million.

M-LEARNING APPLICATIONS



According to The 2012-2017 Africa Mobile Learning Market report released by Ambient Insight, the five-year CAGR for the M-learning market in Africa is 38.9 per cent. Revenues are expected to increase more than five-fold to reach \$530.1 million by 2017, up from \$102.4 million in 2012.



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ANALYST MENTIONS



REPORT TITLE: Gartner Magic Quadrant for Integrated Revenue and Customer Management for CSPs for 2016

PUBLISHER: Gartner

PUBLICATION DATE: October 2016

Mahindra Comviva has been positioned in this Gartner Magic Quadrant. The company has been recognized as a niche player for its billing solutions (iPACS, mBAS), and customer analytics suite Mobilytix™.

REPORT TITLE: Managing Disaster Response through Mobile in Middle East and North Africa

PUBLISHER: GSMA Intelligence

PUBLICATION DATE: December 2016

Mahindra Comviva has been mentioned in this report for developing the Asia Hawala service in Iraq. Asia Hawala is a mobile money service launched by Asiacell, a subsidiary of Ooredoo, in December 2015. The service is run in conjunction with the Central Bank of Iraq and was developed by Mahindra Comviva.



IN THE MEDIA

“There is little doubt that the business case for mobile payments in the Middle East is strong”

Srinivas Nidugondi shares his views with MobilePaymentsToday.com

“It is very hard to exist in the global telecom space without innovation”

Manoranjan (Mao) Mohapatra in a conversation with The CEO Magazine

“Digital assets need to be leveraged to the fullest to boost ARPUs”

Amit Sanyal in an interview with Telecoms.com

“Making remittances interoperable can ease money transfer”

Ambar Sur shares his views with The Independent

TOMORROWS' TRACKER



Managed Services to grow from \$ 145.33 billion in 2016 to \$242.45 billion by 2021

Source: www.marketsandmarkets.com



The global mobile payment market will reach \$780 billion by end-2017

Source: www.nfcworld.com



Global mobile content market expected to reach over \$170 billion by 2019

Source: www.technavio.com



The global mobile messaging applications space is estimated to reach 2.1 billion customers by 2020

Source: www.strategyr.com



Global IP traffic will increase nearly threefold over the next 5 years.

Source: Cisco Visual Networking Index

Mahindra COMVIVA

THE BUSINESS OF TOMORROWS

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