Telecom Business Review
12 (1) 2019, 23-34
http://publishingindia.com/tbr/

Data Monetization Strategies for New Age Digital Communication Providers in India

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Abstract

India has quickly evolved into a converged digital communications market. It is the second largest telecom market with close to 1.2 billion subscribers and third largest Internet market which is nearing 500 million users. The Digital disruption has changed the market dynamics and the way the Telco's operate today. This quicksilver Digital transformation has made way for this new makeover.

The interesting 'phase-shift' phenomenon has been the switching of the most valuable contributor towards the overall ARPU (Average revenue per user). Data revenue has toppled voice to come on the top with a practical swap in the percentage contribution figures (44% vs 21%).

The telecom regulator (Telecom Regulatory Authority of India) re-christened itself as Digital Communications Regulatory Authority of India (DCRAI); while the Telecom Commission became Digital Communications Commission (DCC). The National Telecom Policy (NTP 2012) is gives way to National Digital Communications Policy (NDCP). This regulatory change has formalized the hitherto Telecom sector to become a Digital Communication sector and the Network Operators as Digital Telco or Digital Communications Providers.

To be relevant in the Digital era the Telco's have to innovate and evolve their business models: The induction of telecom sector within the overarching Digital ecosystem or economy (including the much needed regulatory policies); thus opens new avenues for growth and innovation driven business models. The research paper analyzes the myriad data monetization strategies that the Telco's have and prioritizes their strategies and digital product/service initiatives to maximize data revenue monetization.

Keywords: Digital Telco, OTT, Data Monetization, Evolution of Telecom in India, Data Monetization Strategies, Digital Business, Mobile Network Operator

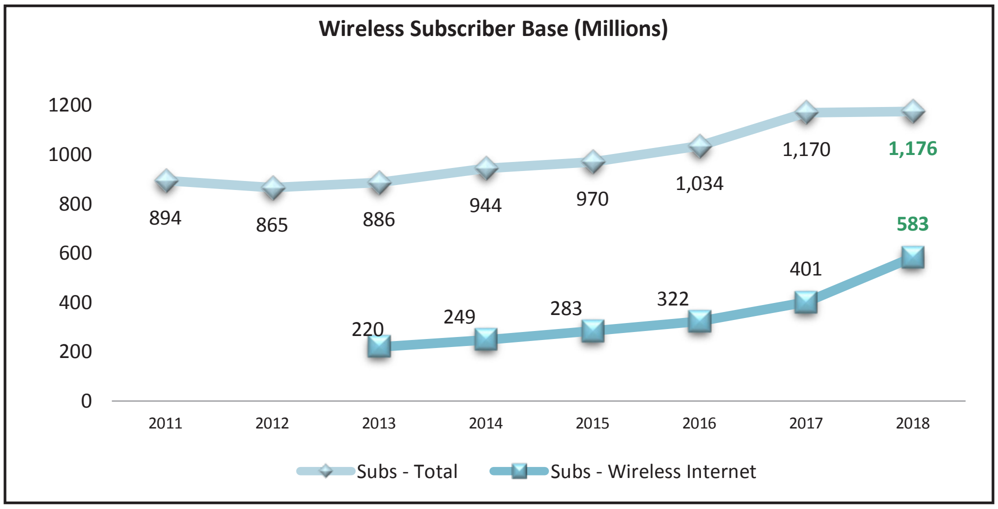
1. Introduction: Making of the Digital Telco in India

India has quickly evolved into a converged digital communications market. It is the second largest telecom market with close to 1.2 billion subscribers and third largest Internet market which is nearing 500 million users. The Digital disruption has changed the market dynamics and the way the Telco's operate today. This quicksilver Digital transformation has made way for this new makeover. The telecom watchdog has been re-christened as Digital Communications Regulatory Authority of India (DCRAI) while the Telecom Commission was renamed as Digital Communications Commission (DCC). The National Telecom Policy (NTP 2012) gives way to proposed National Digital Communications Policy (NDCP 2018).

Table 1: Digital Communications Performance Dashboard

Particulars	*March 2018*	*December 2018*	*%age Change*
Total Subscribers	1,206	1,198	-0.7%
Wireless	1,183	1,176	-0.6%
Wire line	23	22	-4%
Tele-density	93	91	-2%
Urban	166	160	-4%
Rural	59	59	0%

Source: TRAI



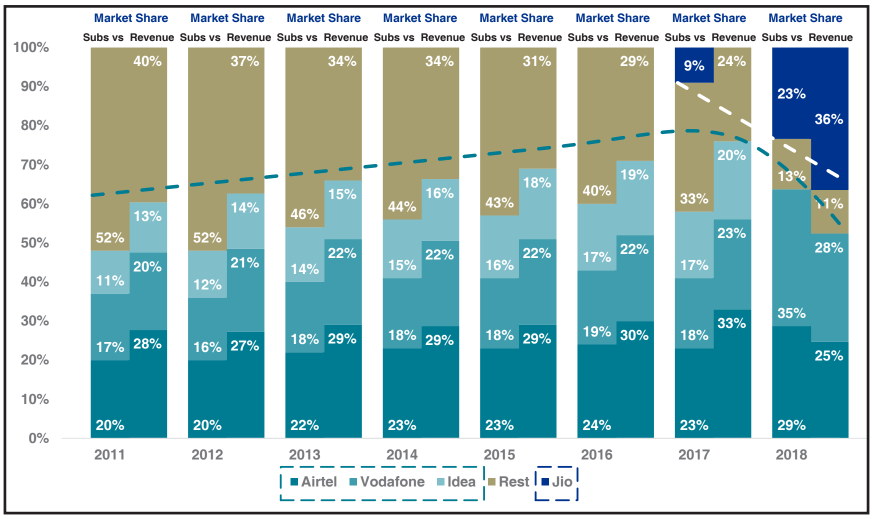
Source: TRAI Performance Report 2011-2018 (2018 depicts data as of December 2018).

Fig. 1: Subscriber Growth

A deeper introspection of the current market performance throws some good insights on the impact of consolidation being witnessed in the last few years. In the dominant wireless segment, there were 10 players (8 private and 2 PSUs) at the start of FY18-19; however this count is expected to reduce to just 5 players (3 private and 2 PSUs):

- Vodafone and Idea merged their operations to give birth to the youngest and market leading telco: Vodafone Idea Ltd.
- Reliance Communications exiting the B2C segment.
- Aircel closing down their operations.
- Telenor India's acquisition by Airtel.
- Tata Teleservices and Tata Teleservices Maharashtra being acquired by Airtel (subject to regulatory approvals).

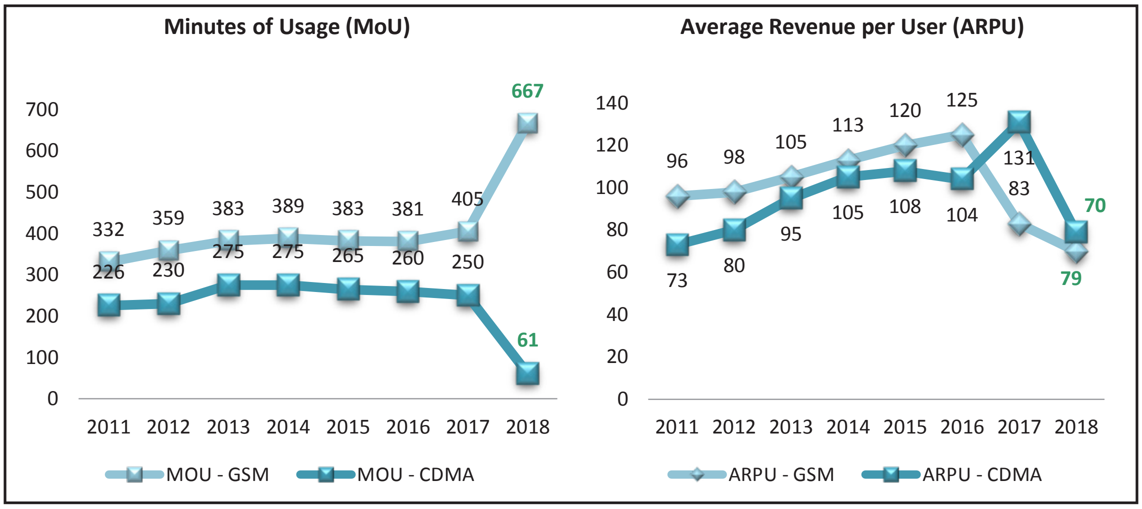
This consolidation has heavily tilted the subscriber and revenue market share (RMS) towards the incumbent Duo (Airtel-Vodafone Idea) and Reliance Jio. The new Trio (Airtel-Vodafone Idea-Jio) now own close to 87% of the subscriber base and approx. 90% of the gross revenue share.



Source: TRAI Performance Report 2011-2018 (2018 depicts data as of December 2018; Vodafone-Idea merged figures depicted for 2018).

Fig. 2: Revenue & Subscriber Market Share

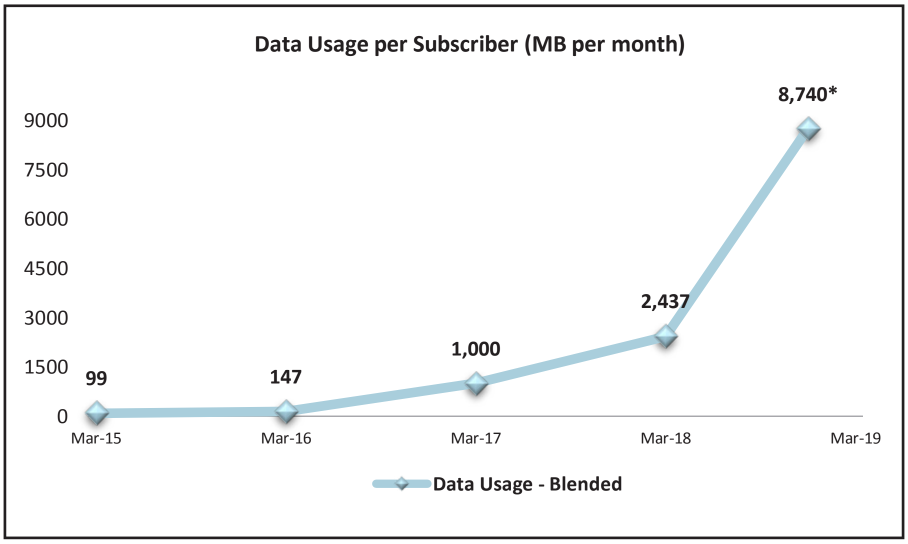
Interestingly, Reliance Jio has put a significant jolt to the year-on-year RMS consolidation being achieved by the erstwhile incumbent Trios (Airtel-Vodafone-Idea). There has been a handsome 65% growth registered in the voice usage in FY17-18.



Source: TRAI Performance Report 2011-2016 (2018 depicts data as of December 2018).

Fig. 3: MOU and ARPU

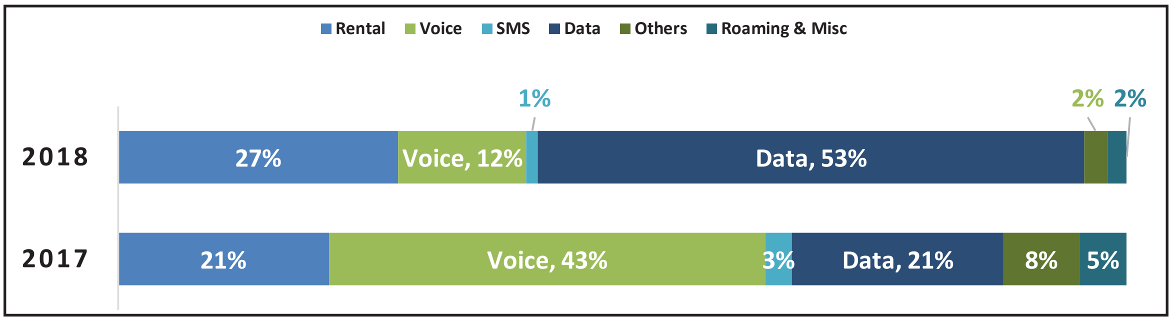
Reliance Jio has continued to unsettle the sector by forcing its competitors to match its slew of free and low-cost packages. This is clearly evident in the growth of average data usage per subscriber: A whopping 580% increase in FY16-17 and another 144% in FY17-18 respectively. However, the significant increase in voice and data usage bears no positive uplift to the ARPU figures: A straight 46% drop in ARPU from INR 131 to INR 70. This signifies that the market has not arrested the promotion of "unlimited usage" schemes; allowing below par revenue realization.



Source: TRAI Performance Report 2011-2018 (* represents Dec 2018 figures).

Fig. 4: Data Usage Per Subscriber (MB Per Month)

The interesting 'phase-shift' phenomenon has been the switching of the most valuable contributor towards the overall ARPU. Data revenue has toppled voice to come on the top with almost 2.5x increase (53% vs 21% earlier) and the average data usage has seen a similar swing of 2.6x increase in just 3 quarters (March vs December 2018).



Source: TRAI Performance Report 2011-2018 (2018 depicts data as of December 2018).

Fig. 5: Composition of ARPU

2. Literature Review

Traditionally the main revenue for the telecom operators were from the voice and messaging services with the revenue from data being the last till recently (Sujata et al., 2015). The Indian mobile service industry is undergoing a shift in their business models from a voice-centric business to a data focused business (TRAI Performance Report, 2011-2016). The mobile operators are exploring different avenues to increase the contribution of non-voice revenue with respect to their overall service revenue. There is also a shift in the communication and social interaction from the traditional SMS and emails to social media becoming the front-runner. Most of the people now opt for data plans than for voice plans which have led to the reduction of revenue from voice business, thus making the mobile network operators explore the business strategies for the increasing their revenue from the data plans they offer to their consumers. In order to maximize the adoption of advanced data plans or products, Telco's would have to invest in Analytical solutions to offer real-time opportunity detection, real-time offer placement and real-time offer subscription (Arthur D. Little, 2018). Operators also sit on a goldmine of digital data and can open up avenues of customer data monetization (by collaborating and/or sharing with cross-Industry players) to define new product offerings.

The operators are investigating the behavior and the aspirations of the subscribers with respect to the mobile-based data services and hence are making extra-large investments on next-generation technologies like 4G LTE/5G. There is a growing recognition across the globe that advancement in technology especially in 5G, Artificial Intelligence and Internet of things (IOT) may lead the new age Digital Telco's to generate new avenues of revenue (Forbes, 2018).

Social media and over-the-top (OTT) streaming services is vastly popular over mobile devices. OTT video services namely Netflix, Hot star, etc. and OTT communication services like WhatsApp, Facebook Messenger, etc. are not controlled by the Telco's. However, it may be prudent for the Operator to collaborate with these companies to provide richer and integrated experience to the subscribers. Some of the popular OTT categories include (Hitachi et al., 2018):

- *TV and Video*: Netflix, YouTube, Google Play, Amazon Prime, etc.
- *Music*: Saavn, Gaana, Amazon Music, Apple iTunes, etc.
- *Communication*: WhatsApp, Skype, Facebook Messenger, iMessage, Viber, etc.
- *Productivity*: Evernote, Salesforce, ZOHO, GoogleDocs, etc.
- *Technology*: Dropbox, iCloud, etc.
- *Community*: Facebook, LinkedIn, Twitter, Google+, Pinterest, Instagram, etc.

The IP-fication or digitization of the telecom network and infrastructure and growing adoption of OTT services over Telco's data pipe; makes it hyper-critical for the Digital Telco's to manage the ubiquitous network experience i.e. the data experience within or outside of homes (or offices).

Hitherto reactive resolution approach thus becomes detrimental to the goal of maximizing data revenues. Telco's are or in the process of deploying real-time (or near real-time) customer experience management (CEM) platforms (Sohag Sarkar, 2014) that can sense or detect the data (or network) experience at a regional-level, at a customer-level or even at the customer's device or application level. The degree of investment increases as one's goes closer to the source of usage. Further, Telco's are adopting Social CRM strategies to fit the customers' desires (Andresen Philip, 2017).

Telco's are investing millions in the upgrade of network (3G, 4G-LTE and now 5G); however the end-customer is somewhat agnostic to the adoption of these technologies and more interested in how the network performs seamlessly, faster than before, and has better coverage especially within the closed walls. The success and adoption of existing or future technologies (like 5G and beyond) would be determined by the strategies implemented by Telco's wrt to indoor connectivity solution namely Wi-Fi Hotspots, Small cell, etc. (Allan Tan, 2019).

3. Research Problem

"Mobile Network Operators in India needs Data Monetization Strategies to maximize overall revenue generation".

Mobile Network Operators' "Voice based revenue" is witnessing zero to negative growth in wake of competition and growing market saturation. The only means of increasing their overall revenue is through increased focus on the "Non-Voice or Data revenue" streams. Operators are therefore investing in next generation data technologies like 4G-LTE/5G. One of the key propositions to increase data (or non-voice) revenue is through greater usage of data services over mobile devices (a trend sweeping across the advanced telecom markets of the world) or IOT/M2M nodes. Riding on this new wave of socialization; the Mobile Network Operators should therefore define innovative monetization strategies to capitalize on their revenue generation potential.

4. Research Objective

The research aimed at achieving the following objective:

- To study the monetization strategies being adopted by Mobile Network Operators to enhance data revenue within the next 2-3 years.
- To ascertain the competitiveness of Top 3 Mobile Network Operators in India based on their data monetization strategies.

5. Research Methodology

The research is based upon descriptive and analytical research choice using a deductive approach.

- *Primary Data Source:* First-hand data from the respective stakeholders was collected from Mobile Network Operator's employees working across customer-facing functions namely: Strategy, Marketing (including Product & Branding), Customer Service, Digital Business, Customer Experience Management and Network & Technology. The representative samples were drawn using probability-based random sampling technique (Lim & Ting, 2013). These respondents were approached through emails to participate in the survey and were sent questionnaire and the filled questionnaires were consolidated and results were normalized consultatively to maintain the consistency ratio. A total of 63 respondents participated in the Data Monetization Survey.
- *Secondary Data Source:* It includes information collected from published sources like reports, journals, books, newspapers, magazines, online publications, government reports, regulatory reports and reports by third party (private) organizations or research agencies (national and international).

Analytical Hierarchy Process (AHP)

Analytical Hierarchy Process (AHP) was used to analyze the data monetization strategies and initiatives proposed by the respondents. This is a multiple criteria decision-making method (Thomas L. Saaty, 1977) that provides measures of judgement consistency, drives priorities among criteria and alternatives by simplifying preference ratings among decision criteria using pair wise comparisons.

AHP was executed in a phased manner as per the below process:

- *Step 1*: The key strategic areas for data monetization was finalized and prioritized using paired-comparison technique in joint consultation with customer-facing CXO, namely: (a) Digital or Over-the-top (OTT) Strategy (b) Data Product Strategy (c) Data Servicing Strategy and (d) Data Experience (or Network) Strategy.

- *Step 2:* The data monetization initiatives within the four strategy areas were elicited basis secondary research and through joint consultation with the respondents from the respective customer-facing functions. They were then asked to distribute 100 points amongst the data monetization strategies within each data strategy area basis the impact of the initiative on the overall data monetization objectives in the next 2-3 years.

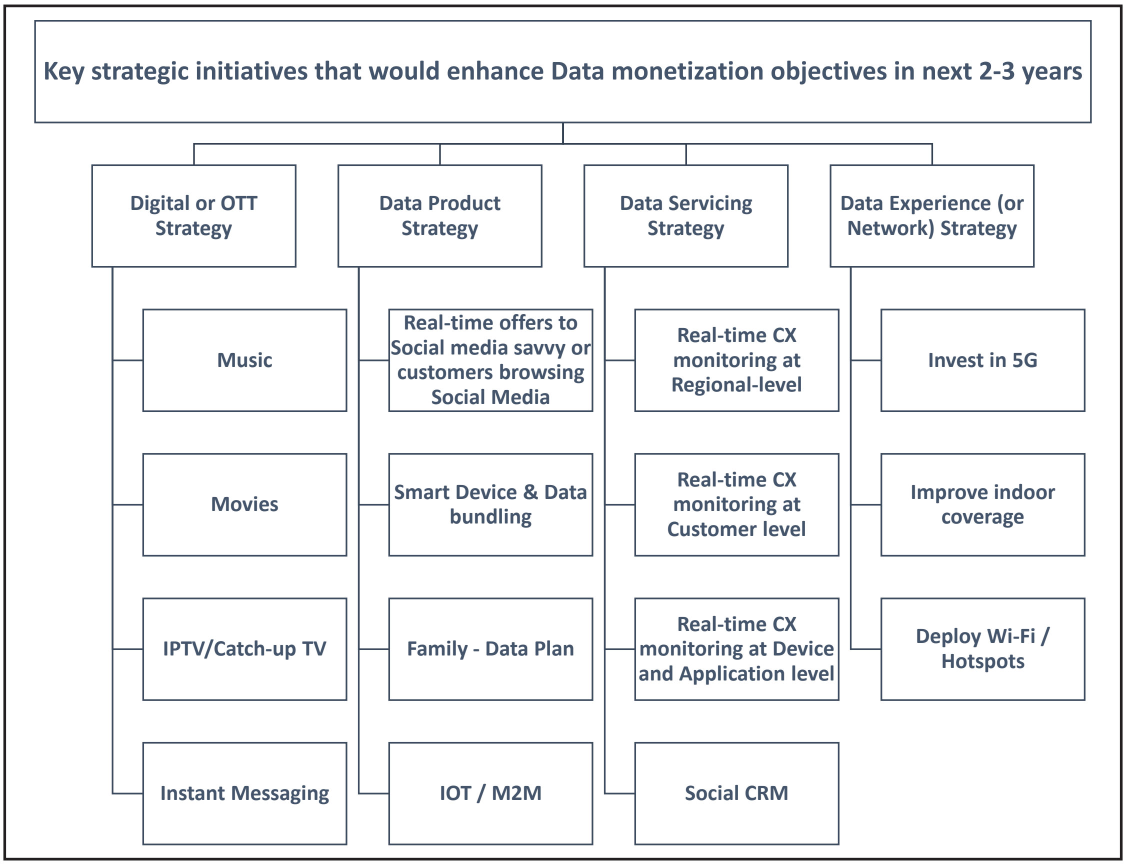


Fig. 6: AHP Model

- *Step 3*: These optimization and prioritization of these data initiatives were performed by means of paired-comparison technique in joint consultation with customer-facing CXO and the respondents. The relative ranking of the data monetization initiatives was derived.
- *Step 4*: The top 3 operators were ranked across these strategic initiatives to articulate their competitive edge wrt to the prioritized data monetization strategy.

6. Data Analysis / Findings

As a first step, the relative prioritization of key data strategy areas was derived using AHP. The key consideration was the relative weightage that the Industry stalwarts would give to these strategies when compared to realistic investment potential and probabilistic return-on-investment in the next 2-3year horizon. The significance of data experience (or network) strategy was overwhelming (65%). This justifies the hunger of the industry to scale to new or advanced technologies decade-on-decade (2G to 5G). The OTTs have given way to Value added services of earlier times and it comes a distant second (15%) when it comes to data monetization avenues. Not far behind was the Digital or Data Products (12%) that pose a significant potential for the Digital Telco's to use customer data to derive meaningful products and services including new offerings like IOT. Last but not the least, the data servicing strategy (8%) was the observed to value-add towards the data monetization objectives.

Table 2: Data Monetization Strategies

Rank	*Data Strategy Type*
1	**Data Experience (or Network) Strategy:** Enhancing data revenue by investing in Network infrastructure to improve uptake, consumption and experience of Data services.
2	**Digital or OTT Strategy:** Launch (own or co-branded) OTTs and/or monetize from existing OTTs available to the customer.
3	**Data Product Strategy:** Enhancing data revenue by means of real-time targeted, new Data Product placement or Customer data monetization.
4	**Data Service Strategy:** Proactively monitoring and servicing the needs or complaints of Data Subscribers.

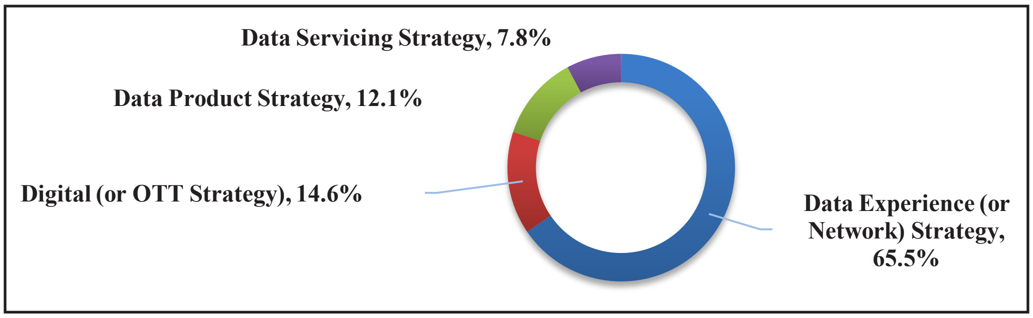


Fig. 7: Priority Ranking and Weights of Data Strategies

Next, a total of 16 strategic initiatives were short-listed and mapped across the four strategic areas. This was carried out using the same criterion viz. realistic investment potential and probabilistic return-on-investment in the next 2-3 year horizon:

- *Invest in 5G:* The primary use case of 5G include services requiring high capacity but low latency connectivity. IOT/M2M is one such application; Cloud services would be another.
- *Improve Indoor Coverage:* The real-estate congestion in ultra-urban areas and the quality of spectrum frequency (lower the better) affect the availability and experience of in-building data services. There are multiple alternatives available for improving the coverage as well as speed in an indoor environment. Fiber-to-the-curb or building (FTTx) is one such wireline technology, while deployment of small cells (low-powered radio access nodes) helps provide service to both indoor and outdoor areas.
- *Deploy Wi-Fi/Hotspots:* To enable connectivity in high footprint areas like shopping arcades, transport points like airports or railway stations; operators or facilities provider are resorting to provide free and/or paid Wi-Fi or Hotspot facilities.
- *Music, Movies and IPTV/Catch-up TV:* Streaming content (music or video) has boomed across urban as well as rural hinterlands. Indian OTT market was valued at US$ 280 mn in January 2018 (Deloitte, 2019).
  - Indian consumer listens to music an average 21.5 hours per week as against a global average of 17.8 hours. Popular OTT music platforms include JioSavaan, Gaana, Hungama, Wynk and Vodafone-Idea Music, as well as International platforms like Apple Music, Amazon Music, Google Play and new arrival (Spotify). Music OTT users are estimated to be approx. 150 million users.
  - In India, Video OTT users are estimated to be approx. 225 million. The video market in 2018 was expected to be approx. US$ 700 million (Arun Gupta, 2019) and expected to reach US$ 2.4 billion by 2023 (Media Partners Asia).
  - In 2018, IPTV overtook direct-to-home (DTH) to become the second-largest multichannel platform in the world next only to cable TV, accounting for 23.4% of the total market of 1.07 billion

households (Dylan Bushell-Embling, 2019). Out of the global users, approx. 57% comes from China, India and the USA.

- *Gaming:* Online gaming has seen a big-shift amongst the Internet diaspora. As per a KPMG report (2019), the revenues figures are approx. US$ 625 million in 2018. There has been approx. ten times growth in the user base from 20 million to 250 million between 2010 and 2018. Majority of the online gaming is accessed over mobile devices (85%).
- *Instant Messaging:* India has emerged as the largest market for instant messaging giant WhatsApp. Others global players are steadily increase investment and users in India. Seeing the shift of telecom users from the Operator's Voice, Messaging and Video services; Telco's are trying to find avenues to leverage the Instant Messaging space to their advantage: either by launching complimentary services or by collaborating with OTT players.
- *Customer Data & Analytics:* Telco's had a very high maturity when it comes to micro-segmentation and campaign management. However, the cost and conversation ratio was rather skewed; until digitization was introduced. Advanced analytical platform (Big data) and technologies (Customer Experience Management) are available that are optimizing STP (Segmentation, Targeting and Proposition) while increasing the conversion ratio. Deep packet inspection is being leveraged to understand the customer data monetization potential. Though it is still at an early stage, there can be multiple use cases of generating new revenue streams. Potential. Telco's are empowered to launch real-time offers to social media savvy (or customers browsing social media).
- *Smart Device & Data Bundling:* Smart device (mobiles, tablets, wearables) penetration is expected to grow to 830 users by 2023. Telco's are expected to leverage this opportunity of combining the device sales with their data product bundling.
- *Family - Data Plan:* In some of the advanced telecom markets, the concept of Family Data Plan has been very successful. The same format is being modelled in India across households (B2C) and corporate users (B2B).
- *IOT / M2M:* Internet of Things (IOT) poses the next big leap for Telco's to connect machines. IoT market in India is expected to grow to US$ 15 billion with 2.7 billion units by 2020 from current US$ 5.6 billion and 200 million connected units. IoT market in India is projected to grow at a CAGR of more than 28% during 2015-2020 (Ayoub Aouad, 2018).
- *Real-Time CX Monitoring and Management:* Advanced analytics clubbed with Network monitoring platforms provide a formidable opportunity to the Digital Telco's. They can proactively monitor the data experience at different levels: (a) Across high data savvy regions or locations (b) Across High Net worth Individuals (c) across customer's devices or applications. This capability allows them to proactively manage the customer experience and avoid any data leakages owing to bad network experience.
- *Social CRM:* The popularity of social media channels has crafted new avenues for the customer to engage and share their experiences (good or bad) to the wider audience. Thus far, Telco's used to own the channels of engagement with the customer; but now no more. These social media channels are beyond the control of the Telco's. There are two critical aspects here: (1) To listen to channels beyond the one's owned by the Telco to understand what the customers are experiencing and (2) To proactively engage with the customer from grievance management as well as branding (or marketing) perspective. Social CRM serves as the right platform to perform all these critical activities. Telco's are or have deployed Social CRM to perform customer engagement and brand building.

Table 3: Strategic Data Initiatives

Data Strategy Type	***Data Initiative Type***
Data Experience (or Network) Strategy	1. Invest in 5G
	2. Improve indoor coverage
	3. Deploy Wi-Fi / Hotspots
OTT Strategy	4. Music
	5. Movies
	6. IPTV/Catch-up TV
	7. Instant Messaging
	8. Gaming
Data Product Strategy	9. Real-time offers to Social media savvy (including customer data monetization)
	10. Smart Device & Data bundling
	11. Family - Data Plan
	12. IOT / M2M
Data Service Strategy	13. Real-time CX monitoring and management at Regional-level
	14. Real-time CX monitoring and management at Customer level
	15. Real-time CX monitoring and management at Device / Application level
	16. Social CRM

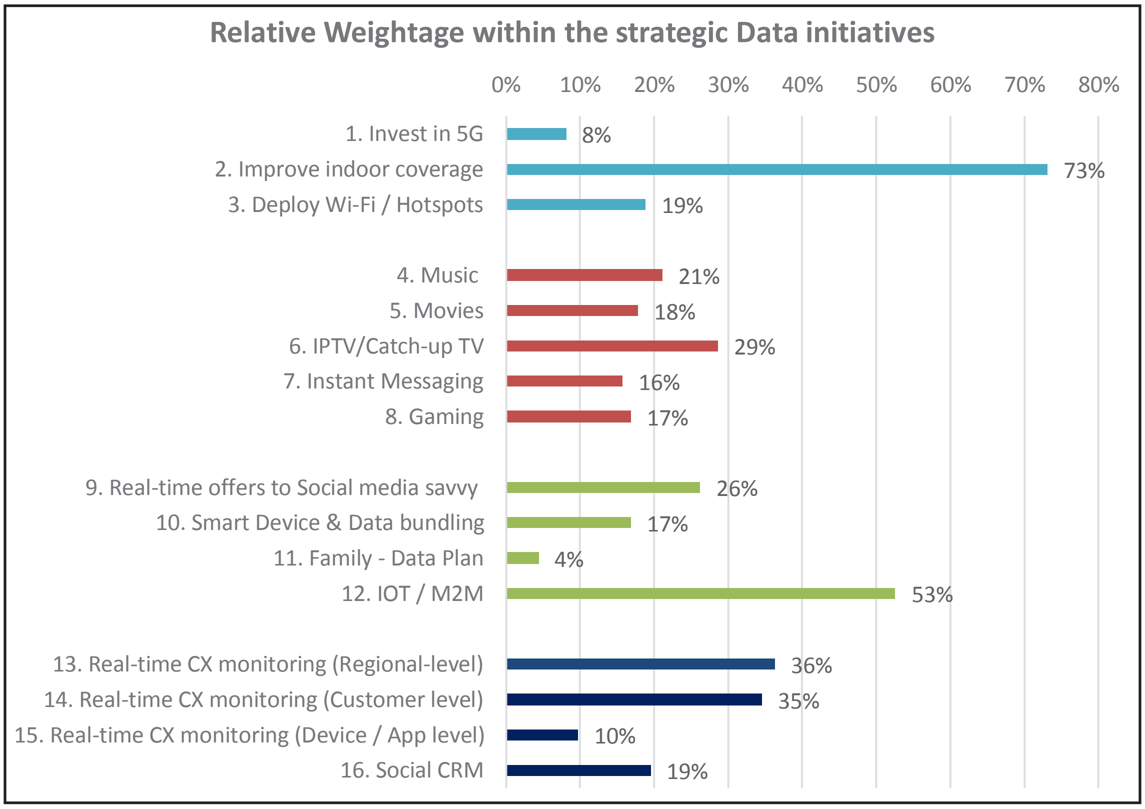


Fig. 8: Priority Ranking and Weights of Strategic Data Initiatives

To derive the relative priority of the data initiatives, the respondents across cross-functional areas distributed '100-points' to the initiatives across the respective strategic areas.

Table 4: Priority Ranking and Weights of Strategic Data Initiatives

Priority Rank	*Data Initiative Type*
1	Improve indoor coverage
2	Deploy Wi-Fi / Hotspots
3	IOT / M2M
4	Invest in 5G
5	IPTV/Catch-up TV
6	Real-time offers to Social media savvy or customers browsing Social Media (including customer data monetization)
7	Music OTT
8	Real-time CX monitoring and management at Regional-level
9	Real-time CX monitoring and management at Customer level
10	Movies OTT
11	Gaming OTT
12	Instant Messaging OTT
13	Smart Device & Data bundling
14	Social CRM
15	Real-time CX monitoring and management at Device and Application level
16	Family - Data Plan

Using paired-comparison technique the priority was then optimized. And, finally AHP was executed to derive the priority ranking and paired weights of these data initiatives.

7. Conclusion

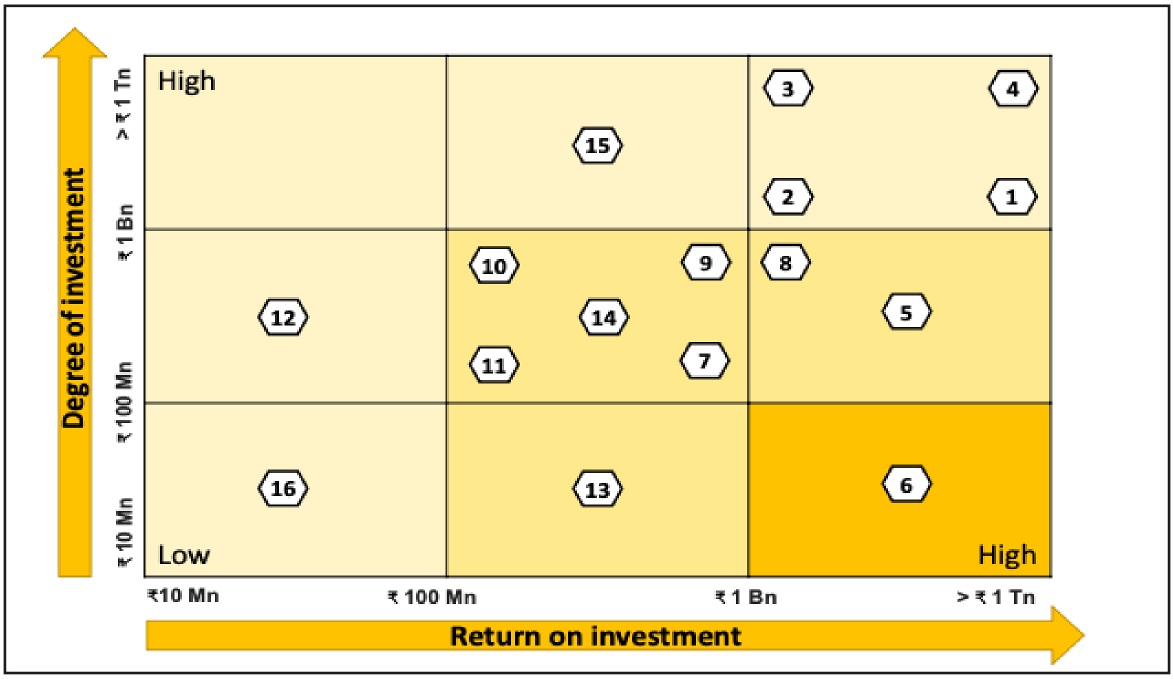
The Mobile Network Operators (MNOs) have 16 strategic initiatives (or opportunities) to take advantage of. These strategic initiatives would require varying degree of upfront (Capex) followed by recurring (Opex) investments. Further, the return on investment (ROI) may vary based on varying factors or stakeholders (customer, regulatory environment, internal capabilities and cross-Industry alliances/partnerships amongst other considerations). These strategic initiatives may be prioritized bases two dimensions:

- Extent of Investment required (mostly Capex) and
- Return on Investment (within the next 2-3 years).

The size of these investments has been categorized across the following brackets:

- *Low:* Ranging from INR 10 million to INR 100 million.
- *Medium:* Ranging from INR 100 million to INR 1 billion.
- *High:* Ranging from INR 1 billion to above INR 1 trillion.

It has translated into higher financing costs, reduction in debt repayment abilities and worsening interest coverage ratios. In FY16-17, the burgeoning debt burden of the major telcos increased by 19%; so much that it instigated the Reserve Bank of India to caution the commercial banks who were providing loans to this sector. The current debt stands over INR 8 trillion or US$ 112 bn (Gagandeep Kaur, 2019). In lieu of these market realities, the new-age Telco's are hyper-conscious of their dollar (or rupee) investments. Therefore, a balancing act is critical to implement or further the top data monetization strategic initiatives.



1	Improve indoor coverage
2	Deploy Wi-Fi / Hotspots
3	IOT / M2M
4	Invest in 5G
5	IPTV/Catch-up TV
6	Real-time offers to Social media savvy (incl. customer data monetization)
7	Music OTT
8	Real-time CX monitoring and management at Regional-level
9	Real-time CX monitoring and management at Customer level
10	Movies OTT
11	Gaming OTT
12	Instant Messaging OTT
13	Smart Device & Data bundling
14	Social CRM
15	Real-time CX monitoring and management at Device / App level
16	Family - Data Plan

Fig. 9: Priority Ranking of Strategic Data Initiatives

To remain competitive in the market and differentiate service offerings are like two-ends of the spectrum:

- *Data-Centric (or Digital) Business Model:* The revenue and usage trends dictate the rise of data-centric business model viz. is evident from the following facts:
  - 2.5x increase in revenue contribution by data alone (53% of ARPU).
  - 2.6x increase in average data usage (8,740 MB per month).
- *Digital Telco Leadership:* The revenue market share has shifted towards operators who have been able to transition their business operations more seamlessly as a Digital Telco:
  - Top 3 market leaders namely Reliance Jio, Vodafone Idea and Bharti Airtel own close to

87% of the subscriber base and approx. 90% of the gross revenue share.

Table 5: Overall Operator Ranking and Score Across Data Initiatives

Rank	*Most Competitive Telco's Across the Top 16 Data Monetization Strategic Initiatives*	
1		Reliance Jio
2		Bharti Airtel
3		Vodafone Idea

The comparative analysis of the top 3 market leaders across the prioritized data monetization initiatives using Analytical Hierarchy Process (AHP) reveals the reason why the market leader has been able to win 36% of the market revenue by acquiring 23% of the mobile subscribers.

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