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Consumer Behavior towards Mobile Social Media and OTTs from Data Monetization and Customer Engagement Perspective

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Abstract

A remarkable growth has been illustrated by the Indian telecom industry. In terms of wireless customers, internet users and data consumption, the mobile communications sector has been at the forefront of this movement that will help India to be one of the biggest markets in the world. Social media witnessed a similar evolution, that become a worldwide phenomenon by transcending regional borders. Nearly 73% of total web users use social networking sites in one way or the other. In North & South America, Western Europe, and Oceania, the number of social media users is humongous. The research *"Consumer behavior towards mobile social media and OTTs from data monetization and customer engagement perspective"* summarizes the findings of a pan-India study conducted with the main objective of researching customers' behavior, expectations and key facilitators (Technology, Operation, Computer, etc.) that would then assist Indian mobile network operators (MNOs) to direct their strategy to monetize their data. It tracks user behavior towards social media platforms and offers perspectives from the marketing and customer care perspective on popular social networking, mobile phone items, devices, the effect of social networking/OTT platforms on the voice and messaging systems of the network, as well as the effect of customer interaction on social media.

Keywords: Digital Telco, OTT, Data Monetization, Data Monetization Strategies, Digital Business, Mobile Network Operator, Top OTTs, Top Social Media

1. Introduction

1.1. Background

As we know today, the desire for ubiquitous means of communication has given birth to 'Mobile Services'. While it is continually changing and evolving; over the last decade (2009-2019), the popularity of mobile services has increased leaps and bounds. India, the seventh largest nation by region and the second most populous nation, has been at the forefront of a mobile revolution with over 1,339 billion people (Worldbank, 2020). Taking examples from the global telecommunications industry, the Indian industry has scripted an unparalleled growth story. A paradigm shift from the "voice-centric" business model to a "data-focused" business has taken place in Indian mobile services. This turning point has prompted the (MNOs) to search for new innovative ways to maximize their data revenue.

On the other hand, social media has become pervasive and essential for social networking and the sharing of information. It has become an online discourse category where people at a prodigious pace build content, distribute and network (Asur et al., 2010). The change is advocated by the increased use of smart and mobile devices. In India, the popularity of social media has increased in importance and the use of social media has increased by the day-one in every three minutes used to access a social media platform online (We are social, 2018).

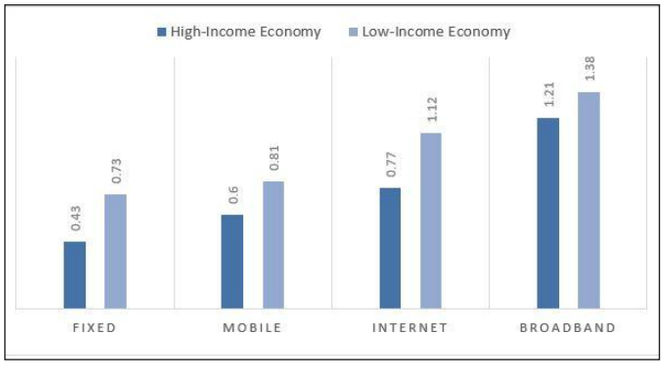
An increasing number of businesses have come to accept social networking platforms as the ultimate medium for consumer interaction and branding (Allen & Overy, 2012).

Operators opened their data pipe with open arms to the innovative Over-the-top (OTT) applications; only to cannibalize their conventional services (Voice, Video and Messaging). MNO's are being marginalized and becoming a 'dumb pipe' with the growing popularity and relevance of OTT players. Operators look forward to engaging with their social media peers and establishing agile market plans. Facebook and Reliance Jio partnership is one such example (2020).

During, the COVID-19 pandemic, with social distancing and remote working norms witnesses change in media habits across the globe. There has been 18% increase in data consumption in March 2020 compared to last year (comScore, 2020). The increase in device usage (Statista, March 2020) was exceptionally high for Smartphone (70%) when compared to others, namely, Laptop (40%), PC (32%), Smart TV or Media streaming services 30%), Tablet (22%) and Gaming console (14%).

1.2. Global Telecom Industry

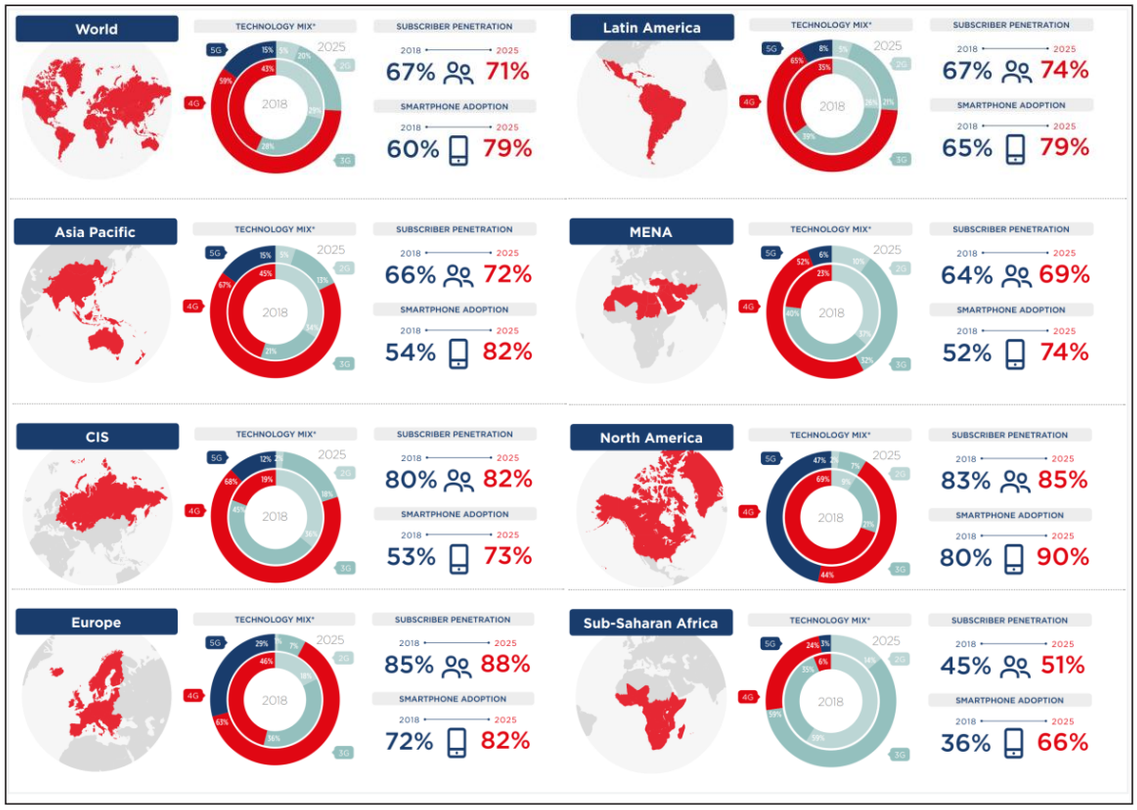
Telecommunications has developed as the lifeline market that drives exogenous economic development. It has profoundly affected the needs of the masses for connectivity, information & entertainment. Telecom has been credited by various reports as a mechanism for economic and social change. The availability of cheaper telecommunications services contributes to greater rates of GDP growth, creates a greater and more skilled population, and makes the population more productive.



Source: World Bank, Information and Communication for Development Report, 2009

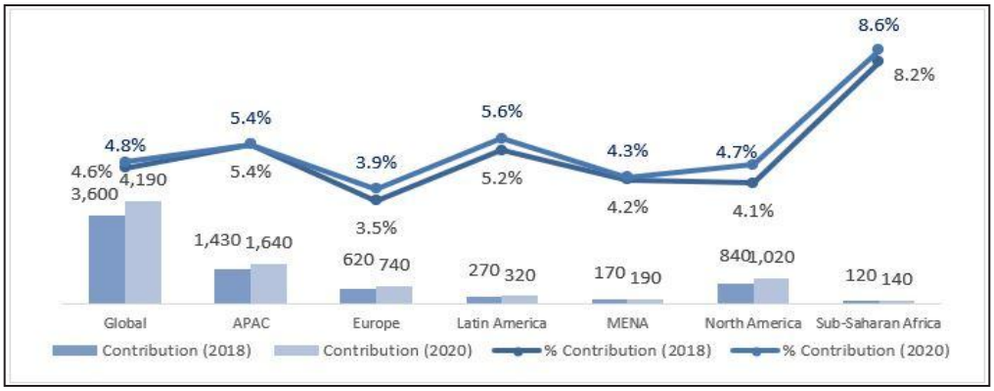
Graph 1: ICT 's Growth Impact (GDP Per Capita Percentage Point Rise with Every Ten-Percentage Point Increase in ICT Penetration)

Mobile networks can be developed at a quicker speed than fixed line systems and can also offer access to geographically disadvantaged regions. The global (individual smartphone subscriber) invasion is a staggering 67 with APAC marginally behind at 66.



Source: GSMA, The Mobile Economy, 2019 (*Note: %age of cellular connections excluding cellular IoT)

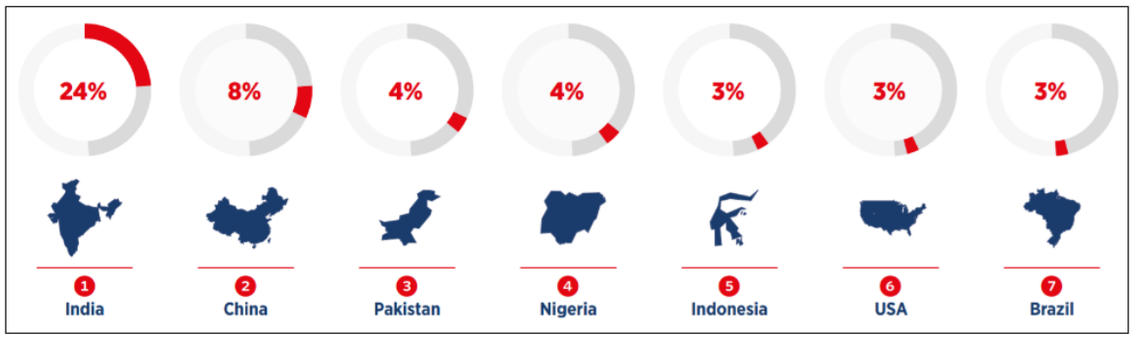
Fig. 1: GSMA - The Mobile Economy 2019



Source: GSMA Intelligence Data, February 2019

Graph 2: Cellular Contribution to GDP (US$ bn)

The developing countries are propelling the subscriber growth. There are about 3.6 billion smartphone network subscribers (almost half of world's population). Half of the world 's device interactions account for 4G. On the other side, smartphones contribute 60% of the connections. GSMA forecasts that by 2025, seven countries will register for new customers: India is at the top with a share of 24% out of 710 million.



Source: GSMA, The Mobile Economy, 2019

Fig. 2: New Additions for Smartphone Subscribers (By 2025, Top 7 Countries)

1.3. Indian Telecom Industry

The development witnessed by the telecom industry of India has been nothing short of remarkable and is still one of the fastest expanding telecommunications markets in the world. The total smartphone customer base was over 1,151 million by 2020, resulting in a nationwide mobile tele-density of 86.98. Cell penetration over rural hinterlands (tele-density of 56.39) and is dominant in urban echelons (tele-density of 151.90).

Source: Telecom Regulatory Authority of India (TRAI), 2019

Graph 3: Mobile vs. Fixed Line Consumers in India in Million (2019)

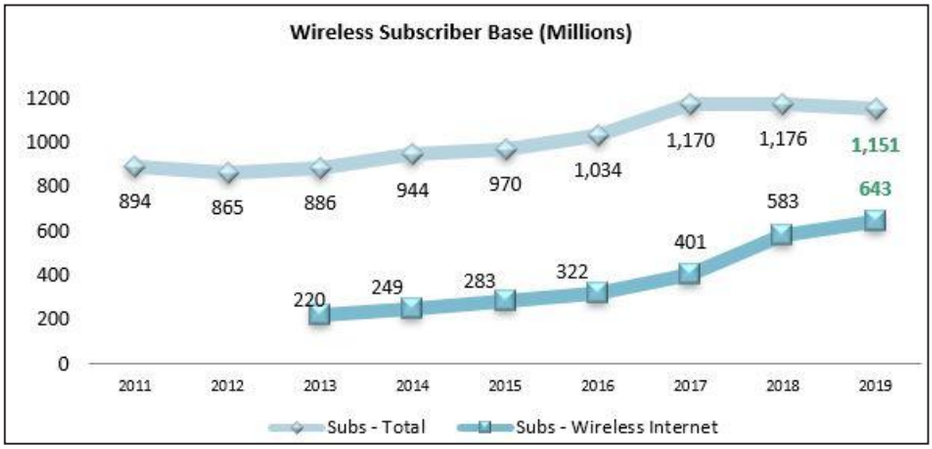
India is the second largest telecommunications market with close to 1.1 billion customers and the third largest mobile market with more than 660 million users.

Table 1: Digital Communications Performance Dashboard (2019)

Particulars	*December 2018*	*December 2019*	*%age Change*
Total Subscribers	1,198	1,172	-0.7%
Wireless	1,176	1,151	-2.1%
Wire line	22	21	-4%
Tele-density	91	89	-3.1%
Urban	160	156	-2.3%
Rural	59	57	-4.8%

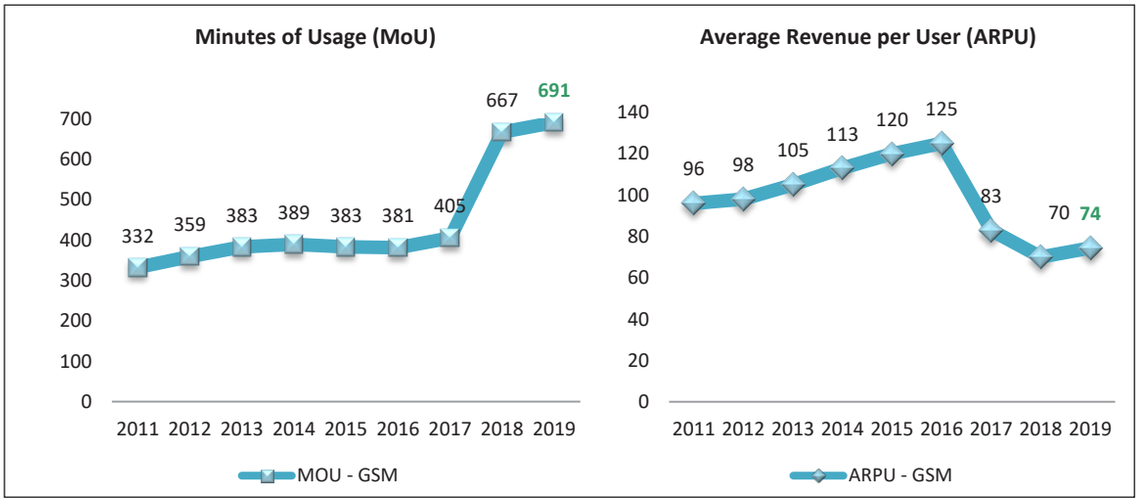
Source: TRAI Performance Report 2018-2019

The industry has witnessed a slight de-growth in overall subscriber base because of market consolidation and exit of multiple players. However, broadband penetration has shown a growth of 60% (post entry of Reliance Jio in 2017). The average minutes of (voice) usage and revenue has shown slight upward trend.



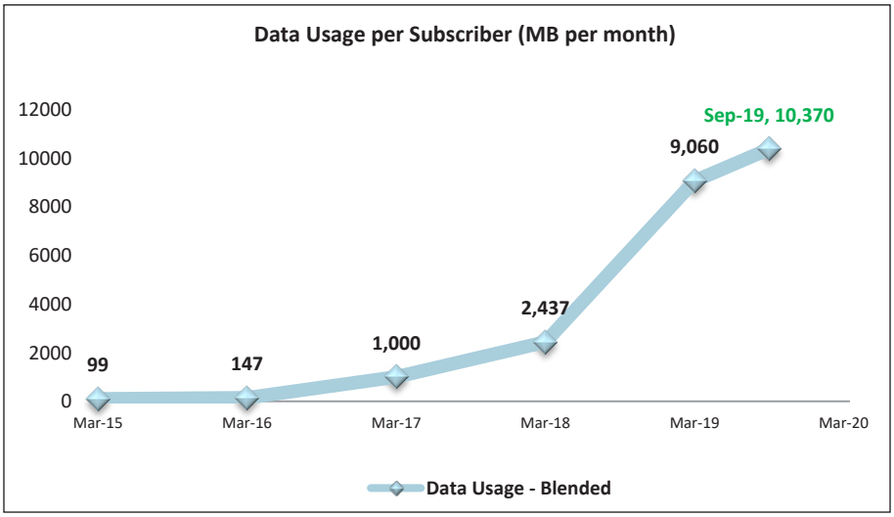
Source: TRAI Performance Report 2011-2019 (2019 depicts data as of December 2019)

Graph 4: Subscriber Growth



Source: TRAI Performance Report 2011-2019 (2019 depicts data as of Sep-2019)

Graph 5: MOU and ARPU

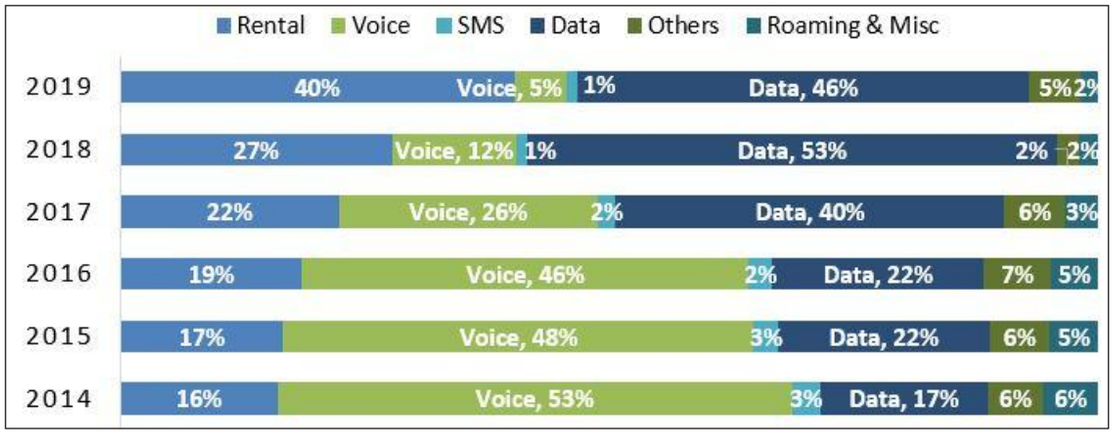


Source: TRAI Performance Report 2011-2019

Graph 6: Data Usage per Subscriber (MB per month)

The interesting 'voice-to-data' phase-shift phenomenon has resulted in 'data' becoming the most valuable contributor:

- The average monthly data usage has seen 10x increase in less than 3 years (i.e. from 1 GB in 2017 to 10+ GB in Sep-2019).
- Data income has moved over the voice to gain the top position (22% in 2016 to 46% in 2019) while Voice revenue has reduced to a minimum (46% in 2016 to mere 5% in 2019).



Source: TRAI Performance Report 2014-2018 (Note: 2019 figures represent Sep 2019)

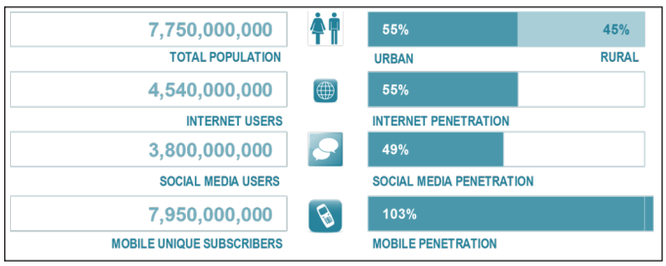
Graph 7: Composition of ARPU

1.4. Social Media Evolution

The intrinsic search of humanity to connect and interact has shifted over the path of information and has given rise to the incredibly popular 'Social Media.' Currently, an engaged social media customer is one out of every four people across the globe (3.8 billion users, Jan 2020). It's a strong customer engagement platform for the company. With the launch of new service services and greater acceptance of smart devices, the scope and use of social networking sites is constantly increasing.

Nearly 100% of the active users are accessing social networking platforms over mobile devices. The increase in popularity of social media sites has been due to the development of Over-the-top (OTT) applications downloadable on smart devices.

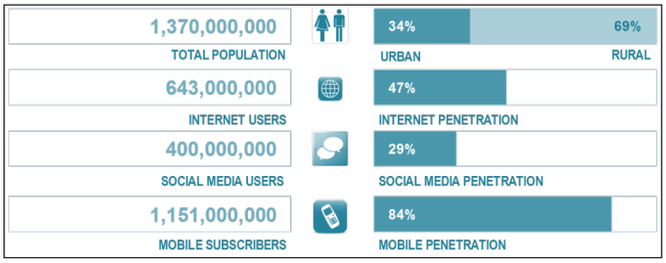
Social networking is a worldwide phenomenon today. Near to 84% of web users use social media (4.54 billion).



Source: We are Social, Global Digital Yearbook (2020)

Fig. 3: Social Media Graph – Worldwide

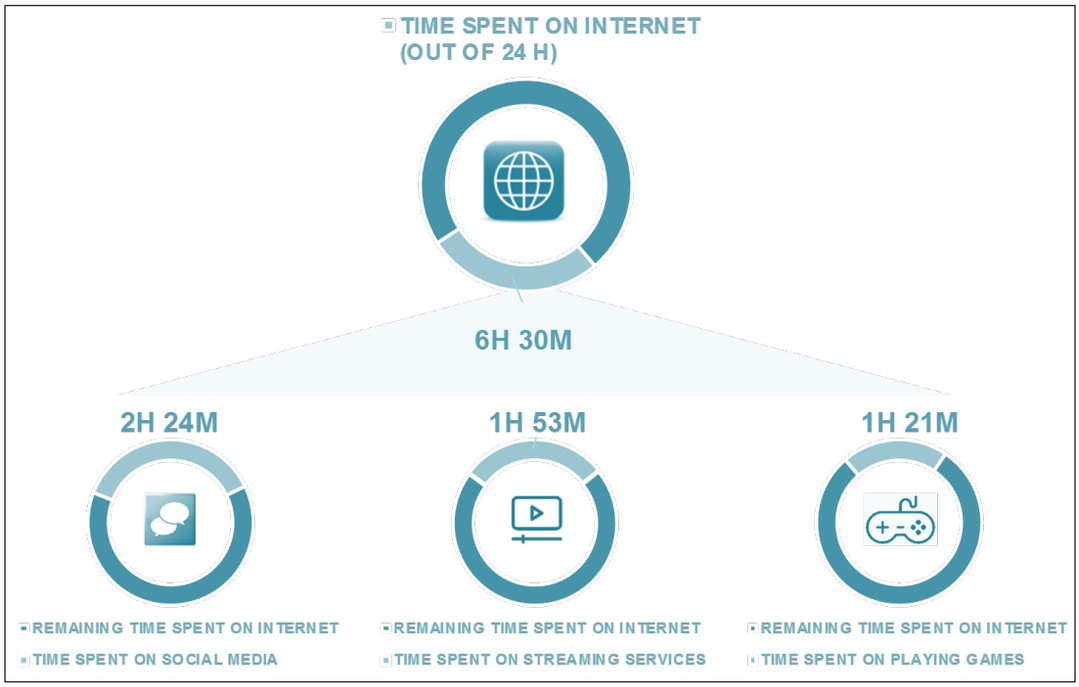
India has never been a step behind in the social media revolution, with close to 30% of its population now active on the social media.



Source: We are Social, Digital 2020 India (2020)

Fig. 4: Social Media Graph - India

On average, Indians spend 7.5 hours online every day: 35% spend on social media platforms; another 41% watch TV (on demand broadcasting, video and streaming) and approx. 19% is spent on streaming music.

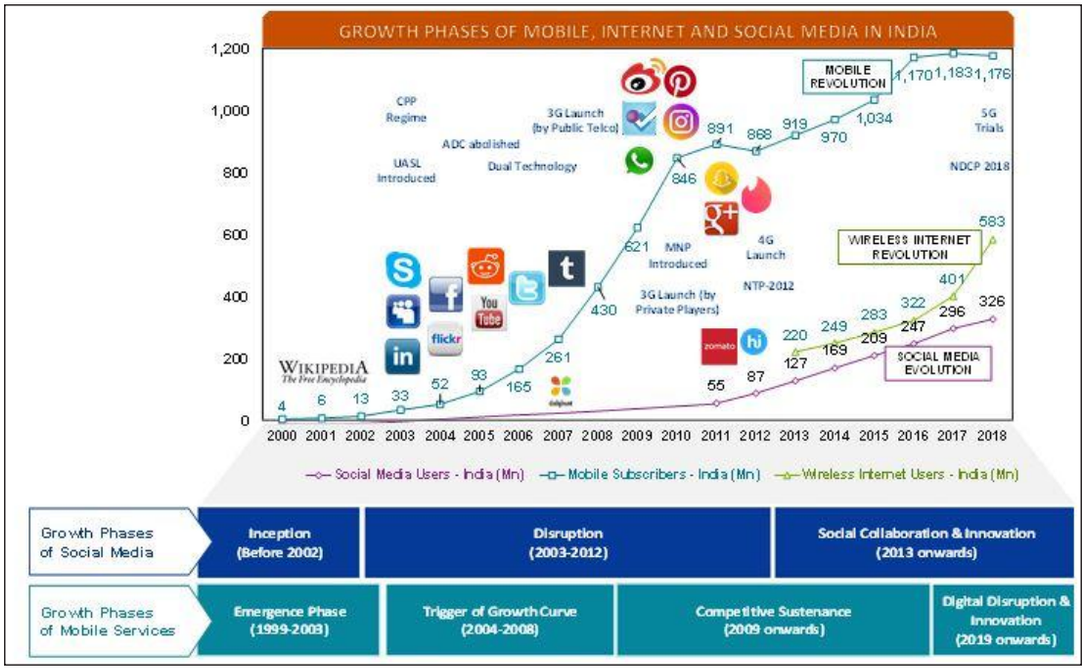


Source: We are Social, Digital 2020 India (2020)

Fig. 5: Internet Time Spent

1.5. Data Monetization

The 'maturity curve' is hitting both the social media and Indian telecom service markets. Indian telecom networks have entered a period of 'digital transformation and growth'. Although social media has entered the 'global collaboration and innovation' period beyond the economic sustenance process, leaving behind the transition phase.



Social Media Growth Phase	Description
I: Inception (Before 2002)	• Inception of Social Media sites using the concepts of Web 2.0
II: Disruption (2003-2012)	• Disruption of socializing model both at an individual as well as organization level
III: Social Collaboration & Innovation (2013 onwards)	• Collaborative business models or technologies to introduce new services or more feature rich propositions

Mobile Service Growth Phase	Description
I: Inception (1992-1998)	• Liberalization of Telecom market and introduction of Mobiles Services in the country
II: Emergence (1999-2003)	• Emergence of unified service providers for growth of telecom infrastructure within the country
III: Trigger of the Growth Curve (2004-2008)	• Dominance of mobile services and momentous growth in national Tele-density
IV: Competitive Sustenance (2009-2018)	• Increase in competitive environment and market driven low-tariff pricing; followed by consolidation
V: Digital Disruption and Innovation (2019 onwards)	• Telco's re-christened as Digital Communications Providers with introduction of National Digital Communications Policy (2018)

Source: Research Scholar's Analysis

Fig. 6: Mobile, Internet and Social Media Development Phases in India

In order to evolve and extend their platforms and engaged customers, social media firms have followed the smartphone path. On the other hand, telecom providers are looking for ways to expand the use of data by their new customers. From a potential growth viewpoint, all of these players can look forward to data monetization strategies.

2. Literature Review

The largest income for telecoms companies has historically been from voice and texting services, with data sales at the bottom until recently (Sujata et al., 2015). The mobile service market of India is moving from a voice-centric company to a data-focused company in its business models (TRAI Performance Report, 2011-2016). Cellular operators are pursuing numerous ways to raise non-voice (or data) sales contributions. Telco invests in predictive solutions to enable real-time demand discovery, real-time deal positioning and real-time deal registration to optimize the acceptance of innovative service plans (or products) (Arthur D. Little, 2018). Operators also sit on a digital data goldmine which will open up opportunities for monetization of consumer data.

MNOs are investing in four strategic areas for monetizing data in next 2-3 years (Sarkar, S., & Sarkar, P., 2019): Digital or OTT, Data experience (or network), Data services and Data product. The research paper highlights 16 strategic data monetization initiatives across these four strategic areas.

The thesis (Audrey Cuillierrier, 2016) discusses the effects of interaction with social media customers. The research examines the influence of social media on consumer satisfaction and suggests that social media has a personal touch to reach consumers, thereby converting consumers over social media as brand ambassadors.

The paper (Mahmoud Abdel Hamid Saleh, 2016) looks at the relationship between the use of social media and consumer relationships in Saudi Arabia with three MNOs. Three factors specific to social media clients were chosen by the researcher: usability and commitment, service evaluation, and interaction with knowledge. The study showed a clear correlation with the use of social networks with the enhancement of the company's customer relationship, confidence and trustworthiness, and service assessment, but not with interaction with knowledge. The results also revealed substantial positive trust and loyalty and customer experience indicators.

3. Objectives

The research aimed at achieving the following objective:

- To analyze the data consumption by mobile subscribers using different data products (specialized vs standard).
- To analyze the behavior of mobile subscribers towards Over-the-top (OTT) services over MNO's services (voice, messaging, or video).
- To study the popular social media sites that generates the maximum data usage (or revenue) for the MNO.
- To assess the efficacy of the social media platform from the viewpoint of mobile customer interaction and operator branding.

4. Research Methodology

The research choice is descriptive and analytical and used a deductive approach.

- *Primary Data*: First-hand information of the respective stakeholders was obtained:

Table 2: Data Source (Primary)

Category	*Population*	*Sample Size*
Mobile Subscribers	1.152 billion (Source: TRAI)	~11,000

Source: Research Scholar's Analysis

- *Secondary Data:* This includes data obtained from written documents such as surveys, articles , books, newsletters, magazines, web outlets, government records, administrative surveys, MIS reports from MNO, and other organizations.

Pilot testing learnings were incorporated to improve the final survey questionnaire and parametric statistical techniques (ANOVA and Pearson's Correlation Test) used for hypothesis testing.

5. Data Analysis/Findings

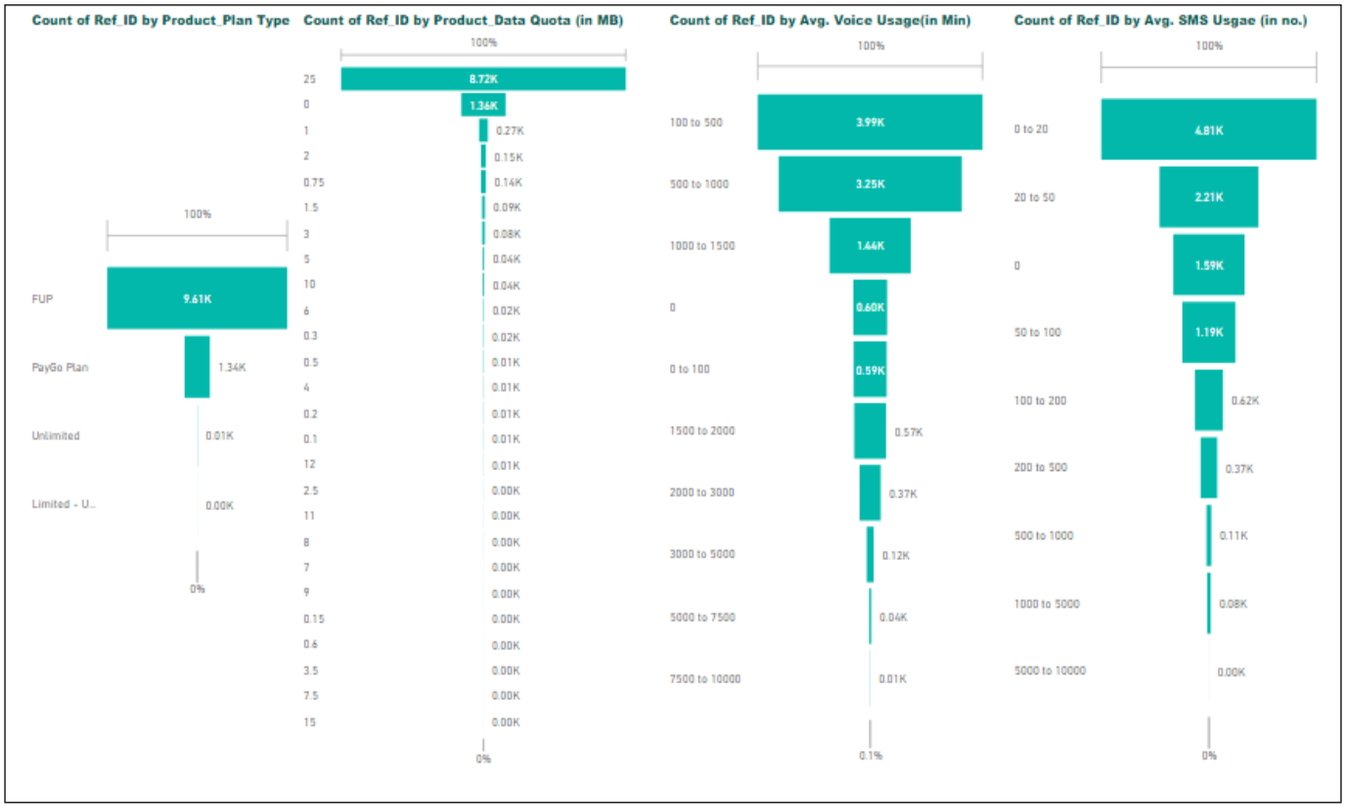
Data analysis performed on the pan-India customer survey with approx. 11,000 respondents spanning across 28 state territories (22 Telecom Circles) and covered 494 cities of India:

- Demographic Analysis performed across following parameters: Gender, age, occupation, geography (category of town , state, town, Telecom Circle and Wireless Circle category).

Source: Primary data analysis

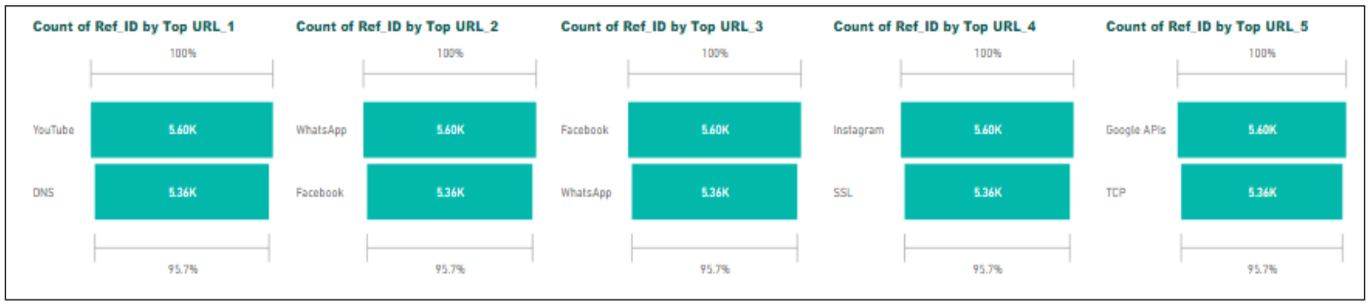
Fig. 7: Customer Survey - Demographic Analysis

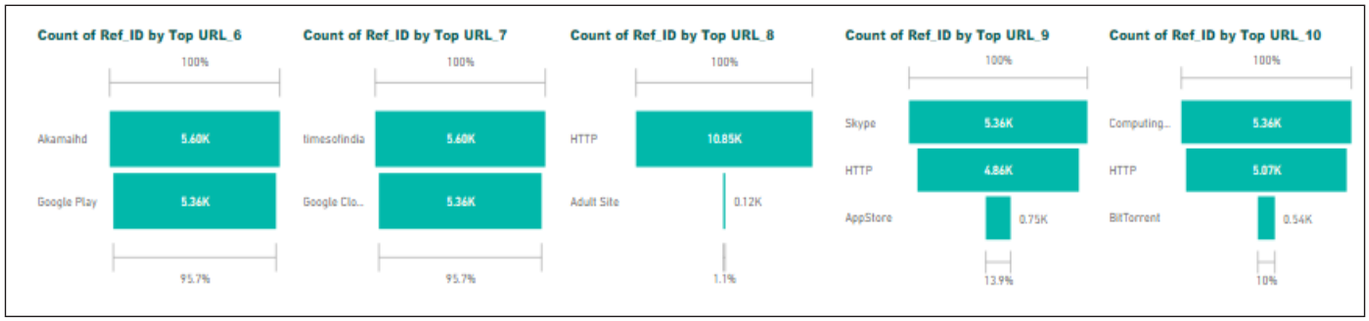
- Network and device analysis performed across following parameters: Form of network, Type of Operation, Type of Device, Operating System of the unit.
- Product and usage analysis performed across following parameters: Data, Voice and Messaging, Product Type, Product Sub-type.

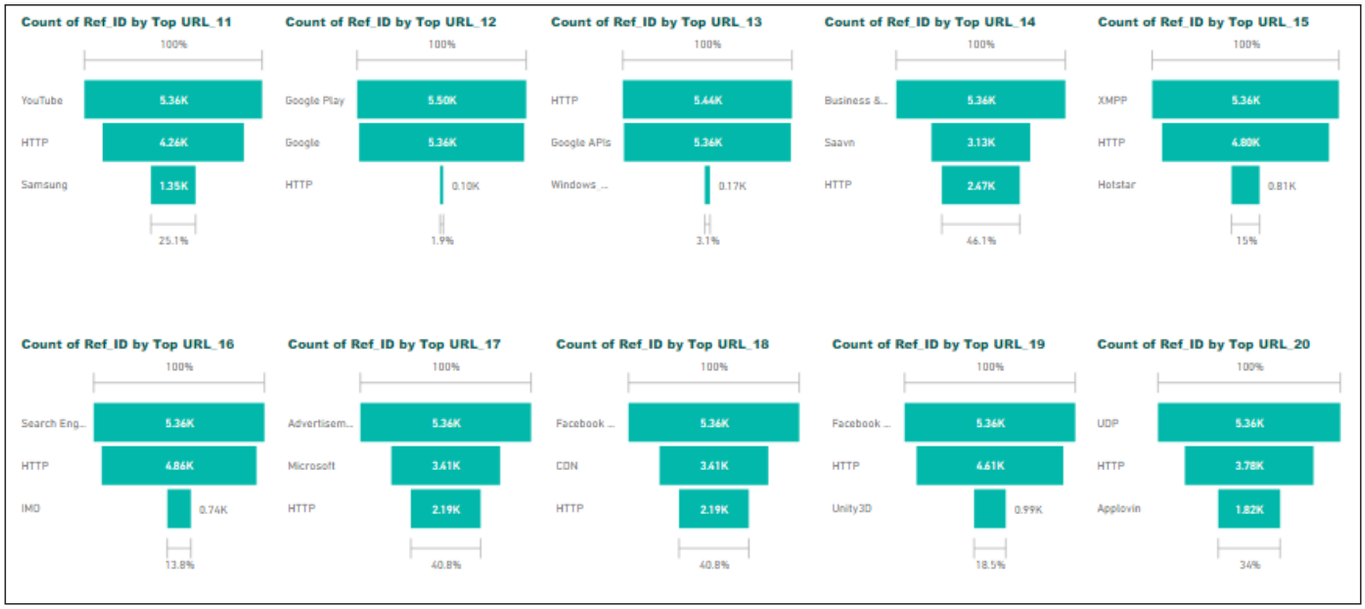


Source: Primary data analysis (includes MNO data)

Fig. 8: Customer Survey - Product and usage analysis



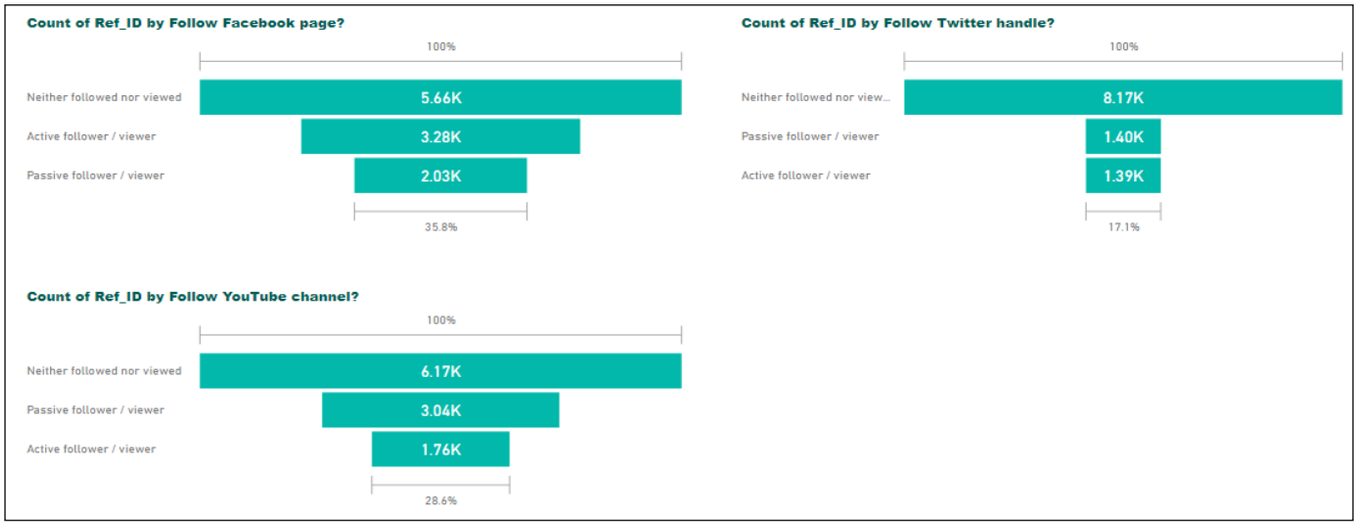




Source: Primary data analysis (includes MNO data)

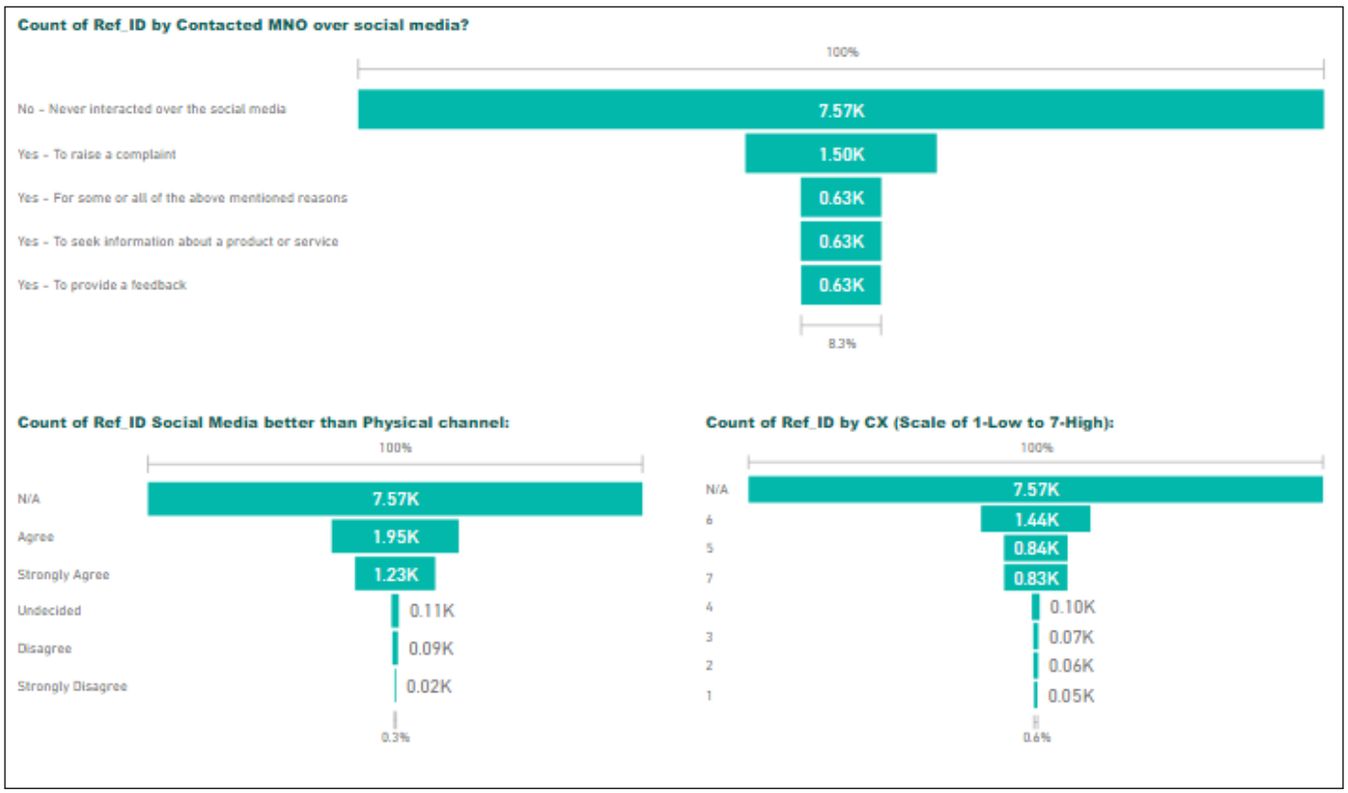
Fig. 9: Customer Survey – Top 20 URLs

- URL analysis performed to gauge the top 20 URLs that contribute to data usage.
- Social media branding analysis performed across following platforms: Via Facebook, YouTube, and Twitter.
- Social media servicing analysis performed through customer processes, social media platform used for Telco interaction, and social media customer understanding or experience.



Source: Primary data analysis

Fig. 10: Customer Survey – Social Media Branding and Servicing Analysis



Source: Primary data analysis

Fig. 11: Customer Survey – Social Media Branding and Servicing Analysis

6. Conclusion

Key deductions based on the Mobile Subscriber (or Consumer) survey are as follows:

- From a data monetization standpoint, advanced application items are more beneficial:
  - A host of ambitious plans to target data-hungry subscribers have been launched by Mobile Network Operators (MNOs). These initiatives were listed under two groups in light of the stated study goal and mobile social media users:
  - *Standard Data Products*: Standard tariffs (or rates) in this category extend to the use of data by consumers and are generally referred to as the PayGo Package (or Pay-as-you-go).
  - *Specialized Data Products:* As it suggests, they provide pricing plans who-in-turn provide the data clients with differentiated experience. Common under 3G/4G-LTE/5G, they offer unrestricted or defined free-quota data use data (under a fair use policy). After the free quota, the user goes down to 4G, 3G or 2G (low bandwidth or network). Social media packs, introduced earlier, stand withdrawn because of net neutrality or regulatory recommendations.
  - The average data consumption across specialized data products is greater than the standard data products. This shows that mobile subscribers or social media users are more inclined towards data experience.
- The implementation of Over-the-top (OTT) networks sabotages the additional services offered by Mobile Network Operators (MNOs) to date:
  - Mobile Network Operators (MNOs) has been providing three basic services: Voice, Messaging and Data. Network IP-fication (or digitization) has converge Under the umbrella service, the voice, video, and messaging service, i.e. data.
  - Mobile social media users have greater affinity and Adoption of common OTT services: WhatsApp, Twitter, Skype, Google Cloud Messaging, etc. Such affection is at the detriment of facilities offered by operators. This means that customers are more likely to follow and use OTT platforms to fulfil their demands for speech, video, and messaging.
- Top URLs that generate maximum data usage:

  Social networking (Twitter Video, Google, YouTube, Twitter, Instagram) and instant messaging platforms (Google Cloud Messaging, Facebook Messenger, Skype, WhatsApp, XMPP, IMO) are firmly tilted to the top 20 URLs that produce results.
- Social networking consumer engagement has a positive impact on consumer loyalty:

  In order to convey and share their interactions with smartphone goods (or services), consumers use social media platforms. The contribution could be to: (a) provide input (b) raise a concern (c) pursue product (or service) information.

Table 3: Top URL Categorization

Provider	Social Media	Instant Messaging or VOIP	OTT	Video content
Facebook	✓		✓	✓
Facebook Messenger	✓	✓	✓	✓
Facebook Video	✓		✓	✓
Google	✓		✓	✓
Google Cloud Messaging	✓	✓	✓	✓
IMO	✓	✓	✓	✓
Instagram	✓		✓	✓
Skype	✓	✓	✓	✓
WhatsApp	✓	✓	✓	✓
XMPP	✓	✓	✓	✓
YouTube	✓		✓	✓

Source: Primary data analysis

- MNOs have targeted the social media channels for: (a) Proactive customer engagement around Brand and Marketing (b) Reactive engagement for service or grievance redressal. The famous social media platforms where MNOs have a devoted their presence include, among others: (a) YouTube (b) Facebook (c) Twitter.

- The level of customer satisfaction was analysed across:

  Proactive Engagement: The effect on customer loyalty w.r.t. dedicated presence was found to be poorly coupled across the above social media platforms, while the affect was favourable.

  Reactive Engagement: The effect on customer loyalty was found to be more promising (than constructive engagement) for reactive interaction over social media; and the effect is positive.

- Customer engagement costs are more costly than digital or social media platforms through physical networks such as retail stores, call centres, etc. Operators are finding ways to transfer consumer engagement to less disruptive (or self-serve) platforms, such as smartphone applications, online portals, USSD and/or social media.
- The customer perceived value was significantly higher over social media channels in comparison to physical channels.
- Aforementioned results show that both constructive and reactive social media engagements positively impact consumer loyalty and physical platform experience.

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