A STUDY OF REVENUE MODELS IN TELECOM INDUSTRY IN INDIA

*** Dr. Caroline David**
*** Mr. Bhavesh Kapuria**

* *Research Guide and Head, Department of Economics, D.T.S.S College of Commerce, Malad.*
** *Head of Department of BMS, Vidya Vikas College of Arts, Science, Commerce, B.M.M. and B.M.S., Malad .*

Abstract

In the rapidly evolving landscape of the telecommunications industry, a profound metamorphosis has transpired, driven by a convergence of influential factors such as rapid technological advancements, dynamic shifts in consumer behavior, and the ever-evolving dynamics of the market. This transformative period has been characterized by the advent of groundbreaking technologies, including but not limited to 5G networks, the Internet of Things (IoT), and artificial intelligence, each playing a pivotal role in reshaping the industry's contours. This research paper sets out on a comprehensive exploration with the overarching objective of dissecting and comprehending the intricate web of revenue models implemented by telecommunications operators across the globe. The significance of this endeavor is underscored by the realization that traditional revenue paradigms of the past are no longer adequate or sustainable in the face of contemporary challenges and opportunities. The central focus of this study is a meticulous examination and analysis of the diverse revenue streams embraced by telecom operators. Encompassing a broad spectrum, ranging from conventional services like voice and messaging to the burgeoning domains of data services, Internet of Things connectivity, and digital content, the research aims to uncover patterns, trends, and the underlying strategies that operators employ to navigate the complexities of the modern telecommunications landscape. Integral to this analysis is the exploration of business strategies deployed by telecom operators. Beyond mere revenue generation, operators are increasingly compelled to adopt innovative approaches to remain competitive. This investigation involves a deep dive into strategic decisions such as forging partnerships with content providers, leveraging advanced

Keywords: *Telecom industry, Revenue Models, 5G, Recent trends and challenges*

Introduction:

The telecommunications sector, often heralded as a beacon of technological innovation, stands as a testament to the relentless pursuit of progress. Groundbreaking advancements, notably in the realms of 5G, the Internet of Things (IoT), and artificial intelligence, have coalesced to reshape the very fabric of this industry. In this landscape of perpetual transformation, telecom operators find themselves at the epicenter, maneuvering through a multifaceted terrain marked by dynamic shifts in consumer behavior and the ever-evolving dynamics of the market.

This research embarks on a nuanced exploration, seeking to unravel the intricate tapestry of revenue models employed by telecom operators on a global scale. Against the backdrop of technological marvels like 5G that promise unprecedented connectivity and IoT that interlaces the digital and physical worlds, telecom operators navigate a landscape where adaptability is key.

OPEN ACCESS   **Original Research Article**

Central to this exploration is the recognition that the traditional revenue paradigms that once dominated the industry

are no longer sufficient in addressing the complexities of the present-day telecommunications ecosystem. The research sets forth a primary objective: to illuminate the diverse revenue models embraced by telecom operators worldwide, offering a comprehensive understanding of the financial strategies that underpin their operations.

As consumer behaviors evolve, shaped by the omnipresence of advanced technologies, telecom operators are compelled to redefine their approaches to revenue generation. It involves not only providing traditional services like voice and messaging but also delving into the expansive realms of data services, IoT connectivity, and digital content. The study endeavors to unravel the intricacies of these revenue streams, deciphering patterns, trends, and strategic underpinnings that operators employ to navigate the complexities of an industry in flux.

Moreover, the research recognizes that success in this dynamic landscape extends beyond adapting to technological trends. Business strategies adopted by telecom operators become a focal point of analysis. This involves delving into decisions regarding partnerships with content providers, harnessing advanced data analytics for targeted marketing, and investing in cutting-edge infrastructure to support the next wave of services.

In essence, this research is a journey into the heart of an industry in constant metamorphosis. It seeks to provide not just an analysis but a holistic understanding of the financial strategies that propel telecom operators forward in an era where innovation is not just a choice but a necessity. As the telecommunications sector continues to be a harbinger of technological progress, this exploration contributes to the collective understanding of how operators navigate the complex interplay of technology, consumer behavior, and market dynamics.

Review of Literature:

AliAkbar ForouzeshNejad (2023): This study addresses the uncertainty in multi-criteria decision-making for project portfolio selection in the telecommunications industry. Existing research neglects data-driven approaches, prompting the development of a hybrid framework. The methodology involves identifying project evaluation criteria through theoretical literature review and expert surveys, employing the best–worst fuzzy approach (FBWM) to determine criterion weights. Key criteria include initial capital requirements, initial revenue, specialists employed, energy consumption reduction, and market share increase. Data envelopment analysis (DEA) assesses project performance annually, and machine learning algorithms (random forest, support vector regressors) provide forward-looking efficiency evaluations. Results indicate both models predict project performance, with the random forest regressor exhibiting superior metrics, offering.

Antonio Ghezzi et al. (2015): This study mentions that the mobile telecommunications industry is characterized by constant strategic, marketing, and technological changes. Mobile network operators (MNOs) face challenges in formulating and implementing strategies due to the dynamic and disruptive nature of the industry. This study proposes an interpretative framework to assist MNOs in making strategic decisions amidst technological and business disruptions. The framework was applied in a case study involving four MNOs in Italy, using semi-structured interviews with top and middle managers. The results demonstrate how the framework helps identify drivers of disruptive change and their impact on MNOs' business models. The study also outlines strategic options available to Italian MNOs to navigate the

competitive landscape, suggesting that the findings may be relevant to Western markets in general.

S. Joshi et al. (2016): This paper presents revenue-sharing models designed for mobile operators and over-the-top (OTT) players, offering a potential solution to the intricate challenge of declining average revenue per user (ARPU) for operators, primarily caused by the proliferation of OTT services and the imperative for OTT players to monetize their services. The paper seeks to quantify this opportunity and underscores three partnership models as suggested strategies to reinvigorate revenue growth for both operators and OTT players: 1) Service Bundling, 2) Sponsored Data, and 3) Collaboration Platform Model. Primary data was gathered through an online survey involving 250 respondents aged 16-25 in the city of Pune, complemented by use case examples and secondary data. The paper specifically emphasizes the reasons behind OTT players engaging in partnerships and elucidates how such collaborations can significantly enhance the revenue potential for both telecom and OTT operators.

Ramamurthy Venkatesh et al. (2019): This study mentions, In the face of the growing momentum of digital transformation initiatives across diverse industry sectors, a major hindrance to successful implementation is often attributed to a lack of understanding among business leaders. This article delves into the practical aspects of business models and digital transformation, proposing an improved business model framework with a specific focus on digital services providers. A qualitative review of existing literature on business models, trends in digital transformation, and selected reports highlighting challenges faced by communication service providers was conducted. The key findings advocate for a practical framework and an enhanced representation of business models to address the challenges associated with digital transformation. The authors argue that such an approach holds the potential to unveil novel and innovative opportunities for communication service providers, enabling them to transform into authentic digital service providers. This, in turn, can assist their business customers in strategically planning and methodically advancing their business transformation efforts.

Objectives:

The primary objectives of this study are:

- To analyze existing revenue models in the telecom industry.
- To explore emerging trends and their impact on revenue generation.
- To evaluate the effectiveness of different revenue strategies in diverse market environments.

Reasearch Methodology:

This research adopts a mixed-methods approach, incorporating both quantitative analysis of financial reports and qualitative exploration of industry trends. The quantitative aspect involves a thorough examination of financial reports, including annual reports, market studies, and industry publications. This analysis forms the bedrock for gaining insights into the financial strategies employed by telecom operators. Complementing the quantitative analysis, the qualitative dimension involves conducting interviews with industry experts and key stakeholders. These interviews aim to extract valuable qualitative insights into emerging trends within the telecom sector and the strategic decisions undertaken by the operators. The combination of both quantitative and qualitative methods ensures a comprehensive and well-rounded understanding of the financial landscape and strategic dynamics in the telecom industry.

Revenue Models in Telecom Industry:

1. Traditional Revenue Models:

Traditional revenue models in the telecom industry in India have historically been based on conventional services such as voice calls and text messages. Here are

some key components of traditional revenue models in the Indian telecom sector:

1. **Voice Calls:** Traditional telecom revenue models heavily relied on charges for voice calls. Users were billed on a per-minute basis, and this formed a significant portion of the revenue for telecom operators.

2. **SMS Services:** Short Message Service (SMS) was another essential revenue stream. Users were charged for sending and receiving text messages, and this service was widely used before the proliferation of messaging apps.

3. **Roaming Charges:** Telecom operators generated revenue through roaming charges, where users were billed extra for making calls or using data services while outside their home network.

4. **Data Services:** While data services have become more prominent in recent years, they were initially a part of the traditional revenue model. Users were charged based on the amount of data consumed.

5. **Value-Added Services (VAS):** Traditional revenue models included income from value-added services such as caller ringback tones, news alerts, and other premium services that users could subscribe to for an additional fee.

6. **Handset Sales and Subsidies:** Telecom operators also derived revenue from selling mobile handsets and providing subsidies on the purchase of new devices, especially in the prepaid segment.

7. **Interconnection Charges:** Telecom operators charged each other for calls made between different networks. Interconnection charges contributed to the revenue when users made calls to subscribers on other networks.

It's important to note that the telecom landscape in India has undergone significant changes with the advent of new technologies and the introduction of data-centric services. While traditional revenue models still play a role, telecom operators are increasingly diversifying their revenue streams to adapt to the evolving needs of consumers and the competitive landscape. Data-centric services, digital content, and partnerships with over-the-top (OTT) service providers have become more prevalent in shaping the revenue models of telecom operators in the country.

2. Emerging Revenue Models:

1. 5G Monetization Strategies:

Infrastructure as a Service (IaaS): The introduction of 5G enables telecom operators to monetize their infrastructure by offering it as a service. This involves providing enterprises with customizable network slicing capabilities.

Enhanced Mobile Broadband (eMBB): Operators can generate revenue by providing consumers with faster and more reliable broadband services. This may include offering high-definition video streaming, virtual and augmented reality experiences, and other data-intensive applications.

Industry-Specific Solutions: Telecom companies can develop specialized 5G solutions for various industries, such as healthcare, manufacturing, and smart cities. This includes providing tailored services like remote surgery assistance, smart factory applications, and urban infrastructure management.

2. Internet of Things (IoT) Revenue Streams:

Connectivity Services: Operators can offer specific IoT connectivity services, providing devices with seamless communication. This involves offering SIM cards and data plans designed specifically for IoT devices.

IoT Platform Services: Operators can create and provide IoT platforms that allow businesses to manage and analyze data from connected devices. These platforms may include features like device management, data analytics, and security services.

Industry-Specific IoT Solutions: Developing IoT solutions tailored to specific industries, such as

smart agriculture, healthcare monitoring, or asset tracking, allows operators to tap into diverse markets and address the unique needs of different sectors.

3. Over-the-Top (OTT) Services and Partnerships:

Collaborations with OTT Providers: Telecom operators can form partnerships with OTT service providers for activities like content bundling or preferential data pricing. This approach can attract more subscribers and generate additional revenue through joint promotions.

Value-Added OTT Services: Operators can introduce their own suite of value-added OTT services, such as video streaming, gaming, or exclusive content, to differentiate themselves in the market and generate additional revenue.

4. Content Monetization:

Digital Content Platforms: Telecom companies can establish or partner with digital content platforms, offering a variety of multimedia content. This

includes music and video streaming services, podcasts, and other digital entertainment options.

Advertisements and Sponsorships: Integrating targeted advertisements within digital content or securing sponsorships for specific content can be a lucrative revenue stream for telecom operators entering the realm of content monetization.

Subscription Models: Implementing subscription-based models for premium content, services, or bundles can create a steady and recurring revenue stream from subscribers willing to pay for enhanced offerings.

In summary, as the Indian telecom industry undergoes transformation with the advent of 5G, IoT, OTT services, and content monetization, operators have opportunities to diversify revenue streams and remain competitive. Successful adoption of these emerging models necessitates strategic planning, technological investments, and a deep understanding of evolving consumer preferences.

CURRENT TRENDS AND CHALLENGES IN TELECOM INDUSTRY

CURRENT INDUTSRY TREND		CURRENT INDUSTRY CHALLENGES	
TREND	**IMPACT**	**CHALLENGE**	**IMPACT**
5G Rollout	The anticipation and gradual rollout of 5G technology, offering faster data speeds and low-latency communication.	Enhanced connectivity, support for IoT, and potential for new services.	**Intense Competition**	Fierce competition among telecom operators, leading to pressure on pricing and profit margins.	Strain on profitability and the need for cost-effective strategies.
Data Consumption Growth	Continued growth in data consumption, driven by increased smartphone penetration and affordable data plans.	Opportunities for data-centric services, such as video streaming, online gaming, and other data-intensive applications.	**Regulatory Environment**	Evolving regulatory policies and compliance requirements.	Operators need to adapt to changing regulations, potentially affecting business models.

OPEN ACCESS   **Original Research Article**

Digital Transformation	Embracing digital technologies for improved customer experience, streamlined operations, and innovative service offerings.	Enhanced operational efficiency, introduction of digital services, and improved customer engagement.	Quality of Service	Ensuring consistent and high-quality services, especially with the growing demand for data.	Customer dissatisfaction, potential churn, and reputational risks.
IoT Expansion	Growth in the Internet of Things (IoT) applications across various sectors, including smart cities, healthcare, and agriculture.	New revenue streams, improved efficiency in sectors, and increased demand for IoT connectivity.	Monetization of New Technologies	Effectively monetizing emerging technologies like 5G and IoT. Impact:	Difficulty in realizing returns on investments in new and advanced technologies.
OTT Service Integration	Integration of Over-the-Top (OTT) services, such as video streaming and messaging apps, into telecom offerings.	Increased subscriber engagement, potential for partnerships, and diversified service portfolios.	Spectrum Allocation	Efficient allocation and availability of spectrum for telecom services.	Spectrum scarcity can limit network capacity and hinder the rollout of advanced services.
Smartphone Adoption	Continued increase in smartphone adoption, driven by affordable devices and data plans.	Higher data consumption, increased demand for advanced services, and potential for new applications.	Infrastructure Investment	The need for substantial investment in infrastructure, especially for 5G rollout.	Financial strain on operators, potential delays in network upgrades.

conclusion:

In conclusion, the telecom industry in India is in the midst of a transformative phase, marked by a multitude of changes that are shaping its present and future landscape. One of the notable trends is the diversification of revenue models. Telecom operators are expanding beyond traditional services, introducing a variety of digital offerings such as content streaming, gaming, and other value-added services. This shift reflects a strategic response to changing consumer demands and the need for operators to stay competitive in a rapidly evolving market. Dynamic pricing strategies have emerged as a key element in the industry's playbook. With the prevalence of data-centric usage, operators are introducing flexible pricing models that cater to diverse user needs. Bundling services, combining data, voice, and digital content into attractive packages, has become a common strategy.

These dynamic pricing models not only enhance customer satisfaction but also contribute to increasing average revenue per user (ARPU), a crucial metric in the telecom sector.

The impending rollout of 5G technology is another significant trend, bringing forth a wave of opportunities and challenges. Telecom operators are exploring various monetization strategies related to 5G, ranging from industry-specific solutions to enhanced mobile broadband services. The potential for new revenue streams is immense, but the transition to 5G requires substantial infrastructure investment, posing financial challenges for operators. Collaborations with over-the-top (OTT) service providers represent a strategic move to adapt to changing consumer behaviors. Telecom operators are either integrating existing OTT services into their offerings or developing partnerships to create exclusive content. This trend acknowledges the growing influence of digital content consumption and seeks to position telecom operators as comprehensive service providers.

However, amidst these positive trends, the industry faces several challenges. Intense competition remains a persistent obstacle, compelling operators to innovate continuously to differentiate themselves. The regulatory environment is dynamic, requiring operators to navigate evolving policies and compliance requirements effectively. Substantial investments in infrastructure, especially for 5G, pose financial challenges and necessitate prudent resource allocation. In conclusion, while the Indian telecom industry is embracing transformative trends, success hinges on the industry's ability to navigate challenges, strike a balance between innovation and financial prudence,

and ultimately deliver a seamless and positive experience to the evolving needs of consumers and businesses alike.

Refernces:

A. ForouzeshNejad: A hybrid data-driven model for project portfolio selection problem based on sustainability and strategic dimensions: a case study of the telecommunication industry." 2023.

J Aström et al.:" Value creation and value capture for AI business model innovation: a three-phase process framework". 2022

U Awan and R Sroufe: "Sustainability in the circular economy: insights and dynamics of designing circular business models".2022

A Reuschl et al." "Value configurations in sharing economy business models". 2022

S. Vaska et al.: "The digital transformation of business model innovation: A structured literature review". 2021

I. S. Khan et al.: "Industry 4.0 and sustainable development: A systematic mapping of triple bottom line, Circular Economy and Sustainable Business Models perspectives". 2021

Antonio Ghezzi et al.: "Strategy and business model design in dynamic telecommunications industries: A study on Italian mobile network operators". 2015.

S. Joshi et al.: "Telecom – OTT Partnership – Generating New Revenue Sharing Models ". 2016

Ramamurthy Venkatesh et al.: "Imperatives of Business Models and Digital Transformation for Digital Services Providers". 2019