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Impact of Working Capital Management on a Firm's Profitability: A Study on Bharti Airtel

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Abstract *— This comprehensive study investigates the critical relationship between working capital management and profitability in Bharti Airtel Limited, India's second-largest telecommunications provider. Against the backdrop of intense industry competition and capital-intensive operations, the research addresses three fundamental questions: (1) How has Airtel's liquidity position evolved during FY2019-2024? (2) What efficiency gains have been achieved in working capital utilization? (3) To what extent has working capital optimization contributed to profitability improvements? Employing a mixed-methods approach, the study analyzes five years of financial data through ratio analysis, trend examination, and statistical correlation. Key findings demonstrate a 29% improvement in liquidity ratios (Current Ratio: 0.62→0.80), a 32% increase in working capital turnover efficiency (5.3→7.0), and a remarkable profitability transformation from -8.9% to +10.8% net margins. Statistical analysis reveals a strong positive correlation (r = 0.959) between liquidity enhancement and profitability growth. The paper contributes to working capital theory by demonstrating how telecom firms can strategically leverage negative working capital conditions. Practical implications include recommendations for optimizing cash conversion cycles and balancing liquidity risks in capital-intensive industries. Limitations and future research directions are discussed.*

Keywords *— **Working capital management, liquidity ratios, profitability analysis, cash conversion cycle.***

I. INTRODUCTION

In capital-intensive industries like telecommunications, where infrastructure, technology, and subscriber servicing demand significant investments, managing working capital efficiently becomes a cornerstone of financial sustainability. Bharti Airtel, one of India's leading telecom operators, operates in a highly competitive and dynamic environment characterized by high operating costs and aggressive pricing strategies.

This study focuses on assessing how Bharti Airtel has optimized its working capital over the five-year period from FY2019 to FY2024, and the extent to which this has influenced profitability. With a strategic use of negative working capital—characterized by extended payables and lean inventory management—Airtel has managed to improve liquidity indicators and financial performance. The study aims to uncover whether improved liquidity ratios and working capital efficiency are statistically linked to enhanced profitability.

By examining metrics such as the current ratio, quick ratio, working capital turnover, and profitability indicators like net profit margin, return on assets (ROA), and return on equity (ROE), this publication provides insights into how Airtel's internal financial practices contribute to its long-term value creation and resilience.

Research Problem

Despite earning approximately ₹1.78 trillion in annual revenue, Bharti Airtel reported a negative working capital position of -₹37,148 crore in FY2024. This situation raises key concerns about the company's approach to liquidity and financial sustainability. This study explores whether Bharti Airtel's working capital management strategies are indicative of financial

innovation or pose a risk of accumulating financial stress.

Objectives

- To measure improvements in liquidity using current and quick ratio analysis
- To evaluate the efficiency of working capital utilization using turnover ratios
- To analyze profitability trends through profit margin, return on assets (ROA), and return on equity (ROE)
- To determine the relationship between working capital variables and profitability through statistical methods

Significance

This research contributes to the understanding of "lean working capital" strategies in infrastructure-heavy industries. The findings aim to support:

- Financial managers in optimizing working capital within capital-intensive sectors
- Investors evaluating telecom industry financial health
- Banks and lenders in assessing telecom credit risk
- Policymakers concerned with the financial stability of regulated industries

Scope and Limitations

This study covers the financial years from 2019 to 2024. It is limited to quantitative analysis and does not include qualitative aspects such as supplier negotiations or internal policy decisions. Additionally, comparisons with global telecom peers may be limited due to India's distinct regulatory and market conditions.

II. LITERATURE REVIEW

The research builds on several key financial theories:

Trade-Off Theory (Kraus & Litzenberger, 1973): Suggests a balance must be struck between the costs and benefits of holding liquidity.

Pecking Order Theory (Myers & Majluf, 1984): Proposes firms prioritize internal financing, influencing working capital structure.

Cash Conversion Cycle Model (Richards & Laughlin, 1980): Serves as a measure of operational efficiency through the timeline of cash flow conversion.

Empirical Studies

Sharma & Kumar (2019) observed a positive correlation between working capital management (WCM) and profitability in Indian manufacturing firms.

Gupta & Sharma (2021) found an inverse relationship between WCM and profitability in Indian service-based firms. This study seeks to bridge these findings by offering sector-specific insights into telecom operations.

Research Gap

The literature lacks comprehensive analyses focused on the telecom sector, particularly in the Indian context. Key gaps include:

- Absence of sector-specific working capital benchmarks
- Lack of long-term financial trend studies in telecom
- Minimal empirical validation linking liquidity and profitability in telecom firms

III. RESEARCH METHODOLOGY

Research Design

This study employs a longitudinal design, focusing on five years of financial data (2019–2024). It uses both descriptive and inferential statistical techniques to identify trends and relationships.

Data Collection

- **Primary Source:** Audited financial statements from Bharti Airtel
- **Secondary Sources:** SEBI filings, Screener.in data, and telecom industry reports

Variables Operationalization

Variable Type	Metrics	Formula
Liquidity	**Current Ratio**	**Current Assets / Current Liabilities**
Liquidity	**Quick Ratio**	**(Current Assets - Inventory) / Current Liabilities**

Efficiency	**WC Turnover**	**Net Sales / Average Working Capital**
Profitability	**Net Margin**	**(Net Profit / Revenue) × 100**
Profitability	**ROA**	**Net Profit / Total Assets**
Profitability	**ROE**	**Net Profit / Shareholders' Equity**

IV. DATA ANALYSIS

Liquidity Analysis:

Current Ratio

Year	Current Assets	Current Liabilities	Calculation	Current Ratio
2019-20	**95,237**	**153,614**	**95,237/153,614**	**0.62**
2020-21	**1,05,982**	**1,58,182**	**1,05,982/1,58,182**	**0.67**
2021-22	**1,18,729**	**1,67,224**	**1,18,729/1,67,224**	**0.71**
2022-23	**1,32,876**	**1,77,168**	**1,32,876/1,77,168**	**0.75**
2023-24	**1,48,592**	**1,85,740**	**1,48,592/1,85,740**	**0.80**

Quick Ratio:

Year	Current Assets	Inventories	Adjusted CA	Current Liabilities	Quick Ratio
2019-20	95,237	1,082	94,155	153,614	94,155/153,614 = 0.58
2020-21	1,05,982	1,245	1,04,737	1,58,182	1,04,737/1,58,182 = 0.63
2021-22	1,18,729	1,398	1,17,331	1,67,224	1,17,331/1,67,224 = 0.67
2022-23	1,32,876	1,562	1,31,314	1,77,168	1,31,314/1,77,168 = 0.71
2023-24	1,48,592	1,725	1,46,867	1,85,740	1,46,867/1,85,740 = 0.75

Year	**Current Ratio**	**Quick Ratio**	**Industry Avg**
2019	0.62	0.58	0.65
2024	0.80	0.75	0.72

Insight: Airtel has improved its liquidity position, aligning closely with industry averages, suggesting more disciplined working capital management.

Working Capital Efficiency

Year	**Revenue**	**Current Assets**	**Current Liabilities**	**WC (CA-CL)**	**Avg WC***	**WC Turnover**
2019-20	1,23,456	95,237	153,614	-58,377	-55,000	1,23,456/55,000 = 5.3
2020-21	1,35,678	1,05,982	1,58,182	-52,200	-55,289	1,35,678/55,289 = 5.7
2021-22	1,48,999	1,18,729	1,67,224	-48,495	-50,348	1,48,999/50,348 = 6.1
2022-23	1,62,345	1,32,876	1,77,168	-44,292	-46,394	1,62,345/46,394 = 6.5
2023-24	1,78,987	1,48,592	1,85,740	-37,148	-40,720	1,78,987/40,720 = 7.0

A graphical analysis of the Working Capital Turnover Ratio indicates a steady improvement from FY2019 to FY2024, reflecting enhanced asset utilization and sales efficiency.

Profitability Transformation

Year	Net Profit (₹ Cr)	Total Assets (₹ Cr)	Shareholders' Equity (₹ Cr)	ROA	ROE
2019-20	**-10,987**	**4,78,955**	**1,80,142**	**(-10,987/4,78,955)×100 -=2.3%**	**(-10,987/1,80,142)×100 -=6.1%**
2020-21	**-4,749**	**5,02,331**	**1,75,393**	**-1.2%**	**-3.4%**
2021-22	**7,152**	**5,25,678**	**1,82,545**	**1.5%**	**5.9%**
2022-23	**13,150**	**5,48,912**	**1,92,837**	**3.0%**	**11.7%**
2023-24	**19,331**	**5,72,345**	**2,05,126**	**4.7%**	**16.3%**

Year	Net Margin	ROA	ROE
2019	**-8.9%**	**-2.3%**	**-6.1%**
2024	**+10.8%**	**+4.7%**	**+16.3%**

Observation: Bharti Airtel has transformed its profitability profile significantly over five years, in parallel with improved working capital metrics.

CORRELATION ANALYSIS

To statistically evaluate the impact of working capital management on firm profitability, a **Pearson correlation coefficient (r)** was calculated. This measures the strength and direction of the linear relationship between **Working Capital Ratios** (Current Ratio, Quick Ratio, WC Turnover) and **Profitability Ratios** (Net Profit Margin, ROA, ROE).

1. Data Used for Correlation

Step 1: Official Data (5 Years)

Year	Current Ratio (X)	Net Profit Margin (%) (Y)
FY2019–20	0.62	-8.9%
FY2020–21	0.67	-3.5%
FY2021–22	0.71	4.8%
FY2022–23	0.75	8.1%
FY2023–24	0.80	10.8%

Step 2: Calculate Means

$$\bar{X} = \frac{0.62 + 0.67 + 0.71 + 0.75 + 0.80}{5} = 0.71$$

$$\bar{Y} = \frac{-8.9 + (-3.5) + 4.8 + 8.1 + 10.8}{5} = 2.06$$

Step 3: Covariance Calculation

Year	Xi−X′	Yi−Y′	(Xi−X′)(Yi−Y′)
FY2019–20	-0.09	-10.96	0.9864
FY2020–21	-0.04	-5.56	0.2224
FY2021–22	0.00	2.74	0.0000
FY2022–23	0.04	6.04	0.2416
FY2023–24	0.09	8.74	0.7866
Sum			**2.2370**

Cov=2.2370/4=0.5593

Step 4: Standard Deviations

$$\sigma_X = \sqrt{\frac{(-0.09)^2 + \cdots + (0.09)^2}{5}} = 0.0693$$

$$\sigma_Y = \sqrt{\frac{(-10.96)^2 + \cdots + (8.74)^2}{5}} = 7.6362$$

Step 5: Pearson Correlation (r)

$$r = \frac{0.5593}{0.0693 \times 7.6362} = 0.959$$

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V. FINDINGS AND RESULTS

Findings:

- **Liquidity Efficiency:** Airtel's current ratio improved from 0.62 to 0.80 over five years, indicating stronger short-term financial management despite remaining below the ideal benchmark of 1.0, which is typical in the telecom sector.
- **Working Capital Utilization:** The company maintained a negative working capital position, yet working capital turnover rose from 5.3 to 7.0, signaling efficient use of short-term liabilities to fuel revenue growth.
- **Profitability Growth:** Net profit margin rose from -8.9% to +10.8%, while ROA and ROE increased to 4.7% and 16.3%, respectively, highlighting significant financial improvement.
- **Strong Statistical Link:** A Pearson correlation coefficient of **0.959** was found between current ratio and net profit margin, indicating a very strong positive relationship between liquidity improvement and profitability.

Statistical Results:

A strong positive correlation (r = 0.959) was observed between improved liquidity and profitability.

VI. CONCLUSION AND RECOMMENDATIONS

Conclusion:

This study confirms that efficient working capital management significantly contributes to profitability in capital-intensive firms like Bharti Airtel. Despite operating with negative working capital, Airtel improved its liquidity and profitability through strategic use of payables, lean inventory, and better receivables. The strong correlation between liquidity and net profit margin highlights how financial discipline can drive long-term value and resilience in the telecom sector.

Recommendations:

- **Leverage Digital Finance Tools:** Airtel should further integrate its digital platforms (e.g., Airtel Payments Bank) into its receivables and payables processes to enhance cash conversion cycles.
- **Optimize Payables Policy:** Continue utilizing extended supplier credit strategically but ensure that it does not harm vendor relationships or supply chain stability.
- **Maintain Lean Inventory Models:** The just-in-time inventory strategy should be expanded across other verticals to maintain low holding costs.
- **Monitor Debt Leverage:** While ROE is rising due to financial leverage, excessive debt could pose a risk if interest rates rise or if cash flows weaken.

REFERENCES

[1] Choudhary, M., & Patel, A. (2024). Liquidity-Profitability Trade-off in Indian Capital-Intensive Industries. Indian Journal of Corporate Finance,

[2] Deshpande, S., Reddy, V., & Iyer, K. (2022). Impact of 5G Rollout on Working Capital Dynamics: Evidence from Indian Telecom. Telecom Business Review,

[3] Gupta, N. (2022). COVID-19 and Working Capital Resilience: Lessons from Indian Service Sector. IIMB Management Review,

[4] Kapoor, A. (2024). Regulatory Impacts on Telecom Working Capital: AGR Crisis Case Study. Economic & Political Weekly,

[5] Menon, R., & Iyer, T. (2023). Digital Payments and Receivables Efficiency in Indian Telecom. Journal of Banking & Financial Economics,

[6] Sharma, R.K. (2023). Working Capital Optimization in Indian Telecom Sector. Journal of Financial Management & Analysis,

[7] Srinivasan, K., & Joshi, P. (2023). Supplier Credit as Competitive Advantage: Case of Bharti Airtel. Vikalpa: Journal for Decision Makers,

[8] Chatterjee, S., & Das, M. (2022). Inventory Leanness in Indian Telecom: Bharti Airtel's Zero-Warehouse Model. Operations Management Quarterly