Analyzing Competitive Dynamics in the Algerian Mobile Telecommunications Market: A BCG Matrix

Mezouaghi Djilali[1♦], Belfodil Kamel[2]

[1]University of Relizane, Laboratory of:The Strategy of Transition to a Green Economy (STRATEV), (Algeria), djilali.mezouaghi@univ-relizane.dz

ORCID: http://orcid.org/0009-0003-5827-4338

[2] University of Relizane, (Algeria), kamel.belfodil@univ-relizane.dz

ORCID: http://orcid.org/0009-0003-6604-9544

Received: 14/09/2024 **Accepted: 30/12/2024** **Published:20/01/2025**

Abstract:
This study aimes to analyze the competitive dynamics in the Algerian mobile telecommunications market, focusing on both voice calls and internet services, using the Boston Consulting Matrix framework. The results indicate that Algeria for Mobiles ATM is categorized as a "Star," possessing the highest market share but the lowest growth rate, highlighting a need for innovation. Optimum Telecom Algeria OTA is also classified as a "Star," leading in growth rate and poised for expansion. In contrast, National Telecom Algeria WTA, while classified as a "Star" in voice calls services, has a strong market presence but may need strategic initiatives to enhance visibility, particularly as it operates as a "Cash Cow" in internet services.

Keywords: Mobile Telecommunications,Voice calls, Internet service, Market share,BCG

♦Corresponding author.

I- Introduction:

The economic scene in Algeria is dominated by the role of the state in regulating economic balances and markets. It is widely recognized as a state relying on fossil resources. It appears to be a guardian of consumer rights at times, especially concerning sensitive sectors such as telecommunications, while being distant from significant intervention in economic activities, and at other times, it intervenes in market organization

The historical events in the mobile telecommunications market in Algeria demonstrate a delayed opening up to companies active in this field. The market was in a state of monopoly until the granting of exploitation licenses to the Egyptian company "Orascom Telecom Algeria" in 2001(Menad, 2023, p. 161), and the Kuwaiti company "Wataniya Telecom" in 2003 (became ooredoo November 2013).Starting from July 2022, all the shares of OTA company were acquired by the FNI-National Investment Fund, so that it also became a public institution of an economic nature (public ownership). In light of this monopolistic situation, analyzing the mobile phone services market in Algeria allows us to understand the positions of the three active companies. Among the well-known strategic analysis tools is the Boston Consulting Matrix.

From the above we can formulate the problematic:

How can the Boston Consulting Group (BCG) matrix analysis contribute to the strategic assessment of product/service portfolio of mobile telecommunications companies operating in the Algerian market?

The following sub-questions can be considered:

- How can the BCG matrix be used to map the different products and services offered by mobile telecom companies in the Algerian market?
- How do the relative market shares and growth rates of the mobile telecom products/services in Algeria influence their positioning within the BCG matrix?
- What insights can be drawn from analyzing the distribution of the company's offerings across the BCG matrix quadrants?

This study aims to:

- Identify the essential metrics of the mobile voice call market in Algeria.
- Assess the positioning of companies operating within the telecommunications sector.
- Evaluate the mobile internet market landscape.
- Identify appropriate strategies for each company based on their product offerings (mobile phone calls, mobile internet).

Despite the numerous studies that have addressed telecommunications services in Algeria, only a few have generally examined the telecommunications market. For example, the study by (Ayad, 2012)on the telecommunications market in Algeria sought to analyze the dynamics of demand. The study found that the most obvious extension of the modeling framework proposed in the work is to rely on game theory (to create the Stackelberg differential game).The study by (Hamal, 2022)aimed to model the competitive situation in the Algerian wireless communications market using game theory.it concluded that competition is a fundamental mechanism for organizing the reciprocal relationship between productive institutions, workers, and customers within the market.

Studies that provide a more strategic analysis of the overall telecommunications market appear to be relatively scarce. For example, the study by(Daga, Muhammad, Suwandaru, & Nubil, 2023) analyzed PT XL Axiata's product portfolio using the BCG matrix, identifying the (Xtra Combolite) as a "Stars" product and the (Xtra Hotrod Special) as a "Question Marks". The recommendations focused on maintaining the "Stars" status and increasing investments in Xtra Hotrod Special to transition it into a "Stars" position.the study by (Srivastava & Prakash, 2011)aimed to analyze the telecommunications market represented by 17 Indian companies, across seven services, using the BCG (Boston Consulting Group) analysis. it concluded by identifying the position of each company based on the products they offer, in order to leverage these results to develop strategies and planning.

The pivotal role of strategic analysis lies in guiding the growth and transformation of this industry, especially since the telecommunications market in Algeria is characterized by direct government intervention in its regulation through The Regulatory Authority of Post and Electronic Communications (ARPCE). Competition remains within a very narrow framework, particularly in the face of technological advancements,price discrimination, shifts in consumer preferences, and regulatory changes. Strategic analysis can be applied to address critical issues such as improving service quality and customer experience, as well as developing innovative digital services and solutions.

The purpose of measuring marketing performance is to provide indicators of the organization's position, which are accurate, up-to-date, and sometimes real-time. This is of great importance in charting the current and future trajectory of the organization, and in particular the extent to which the desired goals are achieved, customer satisfaction, and lack of clarity of vision at the marketing levelof marketing activities, and the focus on modifying or improving them, as well as integrating them into the overall strategy. It also has importance in the proactive governance of the market (Shri Bhagavatananda, 2020, pp. 234-235).

1. The theoretical framework

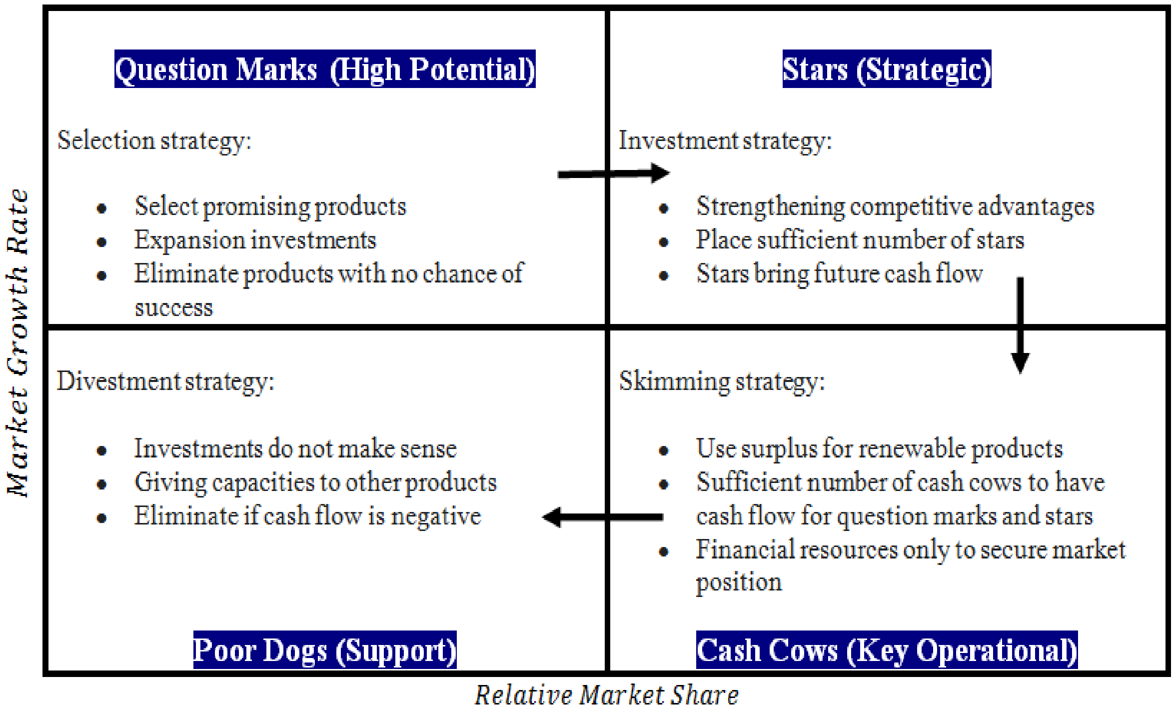
The BCG analysis aims to determine the position of the company, product, or business unit in order to achieve a rational allocation of resources, avoiding unproductive or ineffective investment in certain business activities. It also ensures that more profitable investments in the future are directed towards promising markets (Maheshwari & Agarwal, 2020, p. 188).

Determining the organization's position aims to identify the marketing problems facing the company, and identify opportunities in order to provide sound solutions based on marketing research. This involves defining the market that will be the arena for competition, determining the market share for each product, analyzing the current situation, identifying problems and opportunities, and then building a strategy.(Shri Bhagavatananda, 2020, p. 235)

The purpose is to gain a clear understanding of the organization's current state, the challenges it faces, and the potential opportunities available. This information is essential for developing an effective marketing strategy that addresses the company's specific needs and positions it to compete successfully in the market.

The BCG Matrix helps companies decide how to allocate resources and investments across their product portfolio to maximize growth and profitability. It's a widely used strategic framework in business management (Hinson, Adeola, Limbu, & Mogaji, 2020, p. 211).

Figure (1): BCG matrix with standard strategies.



Source: (Johanning, 2022, p. 105)

The BCG-Matrix provides a clear and concise way to visualize and analyze a company's strategic business units, which can help simplify strategic discussions and inform activity planning based on the portfolio's positioning (Schawel & Billing, 2012, p. 32).

2. Methodology

2.1. Data Collection

It is worth noting that the fixed-line internet market (ADSL, Fiber, 4G LTE, VDSL) was excluded from this study, as this services are in a state of complete monopoly by "Algérie Télécom", the sole provider in this segment of the market.

Table (1): A brief description of the three mobile telecommunications companies in Algeria

Metric	Algeria for mobiles ATM *	Optimum Telecom Algeria OTA **	National Telecom Algeria WTA ***
Creation	August 2003	July 2001	December 2003
Services	18 offers (including 10 prepaid)	4 offers (including 2 prepaid)	4 offers (including 2 prepaid)
Turnover	144 billion Dinars	102.4 billion Dinars	91.9 billion Dinars

Sources: * (mobilis, 2023), ** (djezzy, 2024), * (le chiffre d'affaires, 2024).**

In this study, the number of subscribers was used as a variable representing the market size. The study was divided based on the available data as follows:

- The mobile phone calls market, which is further divided according to the subscription type into prepaid and postpaid subscriptions.
- The mobile internet market.

Table (2): Distribution of subscribers according to subscription type (2022-2023)

Mobile Voice Call Market	Algeria for mobiles ATM		Optimum Telecom Algeria OTA		*National Telecom Algeria WTA*	
YEARS	**2022**	**2023**	**2022**	**2023**	**2022**	**2023**
Pre payment	20 391 988	21 810 879	14 383 943	15 082 533	11 613 170	12 128 529
Post-payment	706 784	707 088	793 932	815 126	1 128 949	977 992
Mobile Voice Call Market	21 098 772	22 517 967	15 177 875	15 897 659	12 742 119	13 106 521
Mobile Internet Market	**Algeria for mobiles ATM**		**Optimum Telecom Algeria OTA**		***National Telecom Algeria WTA***	
YEARS	**2022**	**S1-2023**	**2022**	**S1-2023**	**2022**	**S1-2023**
	19442730	19736449	13676739	14037717	11639036	11370443

source :(ARPCE, 2023)

Data sources were official and published by Ministry Of Post And Telecommunications, and (ARPCE, 2023).

2.2. BCG Matrix Analysis

- **Relative market share :**

The BCG matrix is based on relative market share, because companies with a higher market share have a greater revenue size, allowing them to exploit the benefits of market share for growth (Singh & Gauri Singh, 2024, p. 118) Relative market share is measured based on the company's market share divided by the market share of the leading company (or largest competitor) in the industry (EduGorilla, 2022, p. 1045), The formula for relative market share is:

$$\text{Relative Market Share} = \frac{\text{Company's Market Share(or revenues)}}{\text{Largest competitor's market share (or revenues)}}$$

Table (3): Relative market share.

OTA					
Services	**Types**	**Company's Market Share**	**Market Leader's**	**Market Leader's Market Share**	**Relative Market Share**
Mobile phone market	Pre payment	30.8%	ATM	44.5%	0.69
	Post-payment	32.6%	ATM	28.3%	1.15
	Mobile phone market	30.9%	ATM	43.7%	0.71
Mobile Internet Market	internet	31.1%	ATM	43.7%	0.71
WTA					
Services	**Types**	**Company's Market Share**	**Market Leader's**	**Market Leader's Market Share**	**Relative Market Share**
Mobile phone market	Pre payment	24.7%	ATM	44.5%	0.56
	Post-payment	39.1%	ATM	28.3%	1.38
	Mobile phone market	25.4%	ATM	43.7%	0.58

Mobile Internet Market	internet	25.2%	ATM	43.7%	0.58
ATM					
Services	**Types**	**Company's Market Share**	**Market Leader's**	**Market Leader's Market Share**	**Relative Market Share**
Mobile phone market	Pre payment	44.5%	OTA	30.8%	1.45
	Post-payment	28.3%	OTA	32.6%	0.87
	Mobile phone market	43.7%	OTA	30.9%	1.42
Mobile Internet Market	internet	43.7%	OTA	31.1%	1.41

Source: by researchers.

- **Market growth rate:**

The high market growth rate creates opportunities to achieve higher returns. However, it also requires investing more capital to increase the chances of continued growth in the future (Singh & Gauri Singh, 2024, p. 119).

$$Market\ Growth\ Rate\ = \frac{(End\ Value\ -\ Start\ Value)}{Start\ Value} \times 100\%$$

Table (4):Market growth rate.

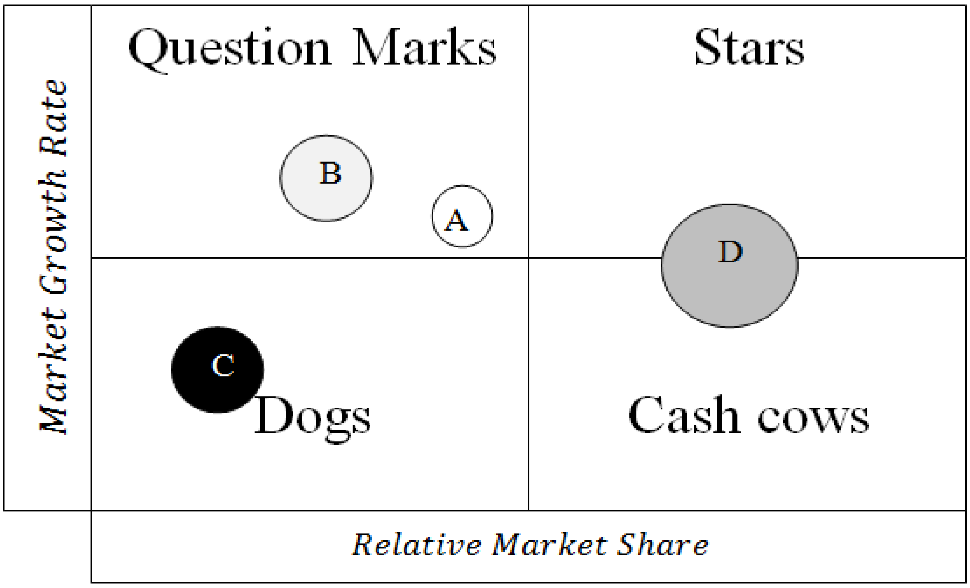
Services	Types	ATM	OTA	WTA
Mobile phone market	**Pre payment**	6.96%	4.86%	4.44%
	Post-payment	0.04%	2.67%	-13.37%
	Mobile phone market	6.73%	4.74%	2.86%
internet	**internet**	1.51%	2.64%	-2.31%

Source:by researchers.

- **Product/Service Portfolio Mapping:**

Sales volume was represented in the BCG matrix by (Schawel & Billing, 2012, p. 34).

Figure (2): An example BCG-Matrix with four business units.



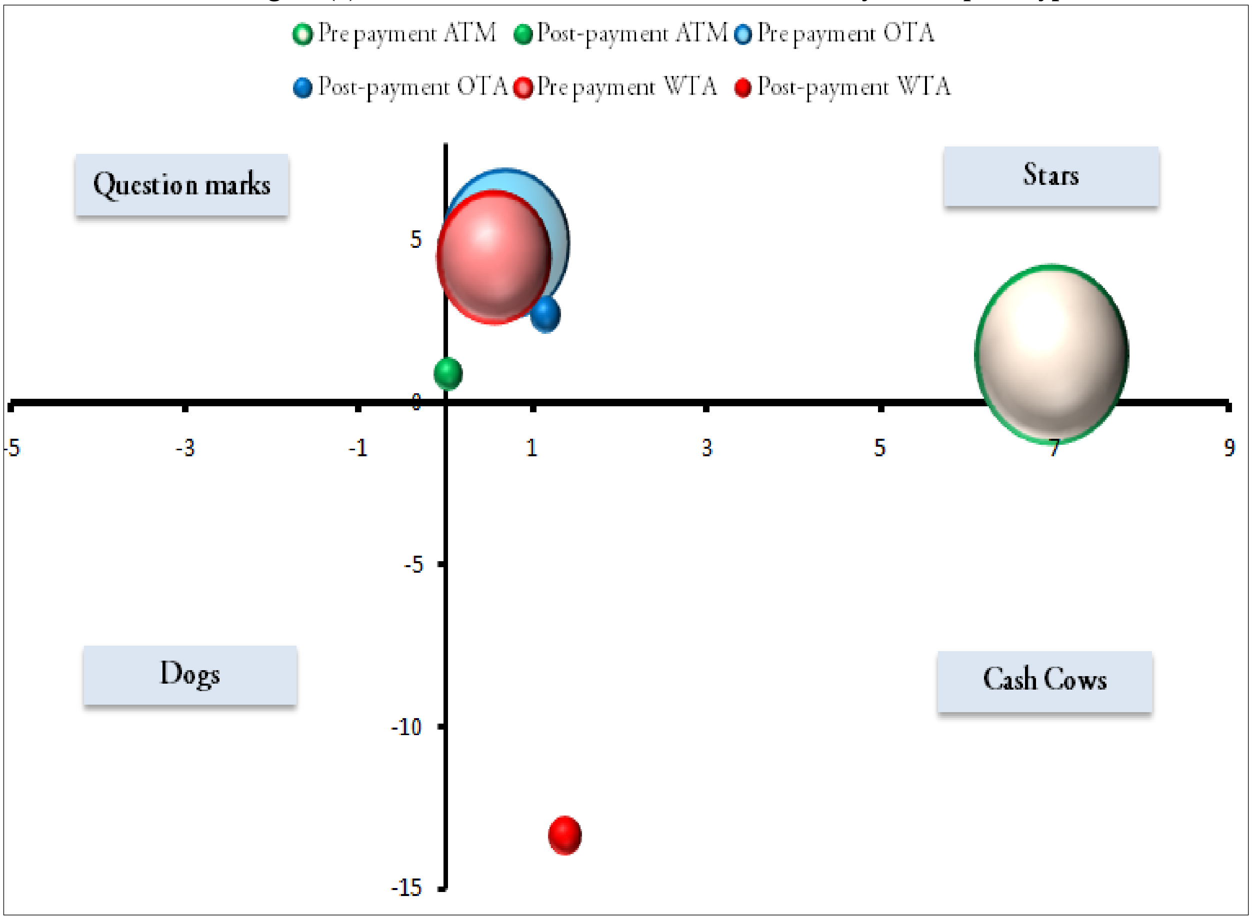
Source: (Schawel & Billing, 2012, p. 33)

If the diameter of the circle for a product with 100 units of sales is 5 cm, then the diameter of the circle for a product with 50 units of sales would be 2.5 cm, following the same proportional relationship.

This visual representation allows the company to quickly assess the relative size and strategic positioning of its different business units within the portfolio.

The x-axis represents the market growth rate, while the y-axis represents the relative market share. The four quadrants are labeled as "Question marks", "Stars", "Dogs", and "Cash Cows."

Figure (3):BCG matrix of Mobile Voice Call Market by subscription type



Source: created by the authors.

Based on the information provided in the graph, the BCG matrix for the Mobile Voice Call Market in Algeria in 2023 can be analyzed as follows:

- **Pre-payment ATM:**

This option is represented by the light green circle, which is the largest among all the circles. The position of the light green circle representing the pre-payment ATM option in the upper right quadrant suggests that this segment is in the "Stars" stage of the BCG matrix. The circle's proximity to the lower right quadrant indicates that the pre-payment ATM option is transitioning towards the "Cash Cows" stage. This implies that the mobile voice call segment for this pre-payment ATM option is a mature and stable market with a strong market share and low growth rate.

- **Post-payment ATM**

The small green circle represents the post-payment ATM option. This circle is located between the upper left and right quadrants, indicating that it is in a "Question Marks" position moving into the "Stars" category, which is indicated by the rising historical data. This implies that the post-payment ATM is a growing market segment with a relatively low market share compared to other options.

The "Question Marks" positioning suggests that the post-payment ATM option is in a high-growth, low-market share segment of the Mobile Voice Call Market. This means that while the demand for this option is increasing, it has not yet established a dominant position in the market. To transition this segment into a "Star," the company may need to evaluate strategic investments, marketing initiatives, and operational improvements to increase its market share and capitalize on the growing demand.

The rising historical data for the post-payment ATM option indicates that it is gaining momentum and moving towards the "Stars" quadrant. This is a positive sign, as it suggests that the segment has the potential to become a market leader if the right strategies are implemented. However, the company will need to carefully monitor the market conditions and make agile decisions to ensure the post-payment ATM option can successfully transition and maintain its position as a "Star" in the Mobile Voice Call Market.

- **Pre-payment and Post-payment OTA**

The light blue circle representing the pre-payment OTA option is positioned in the upper right quadrant, indicating that it is in a "Stars" position - a high-growth, high-market share segment. This suggests that the pre-payment OTA option is a relatively strong or increasing segment in the Algerian Mobile Voice Call Market, and may require careful evaluation or strategic repositioning to maintain its position.

Similarly, the small blue circle representing the post-payment OTA option is also positioned in the upper right quadrant, indicating that it is in a "Stars" stage as well. However, this suggests that the post-payment OTA option is a relatively weak or declining segment in the Algerian Mobile Voice Call Market, and may require strategic attention to address its performance.

- **Pre-payment WTA:**

The big red circle represents the pre-payment WTA option. This circle is positioned in the upper right quadrant, indicating that it is a "Stars" stage - a high-growth, high-market share segment.

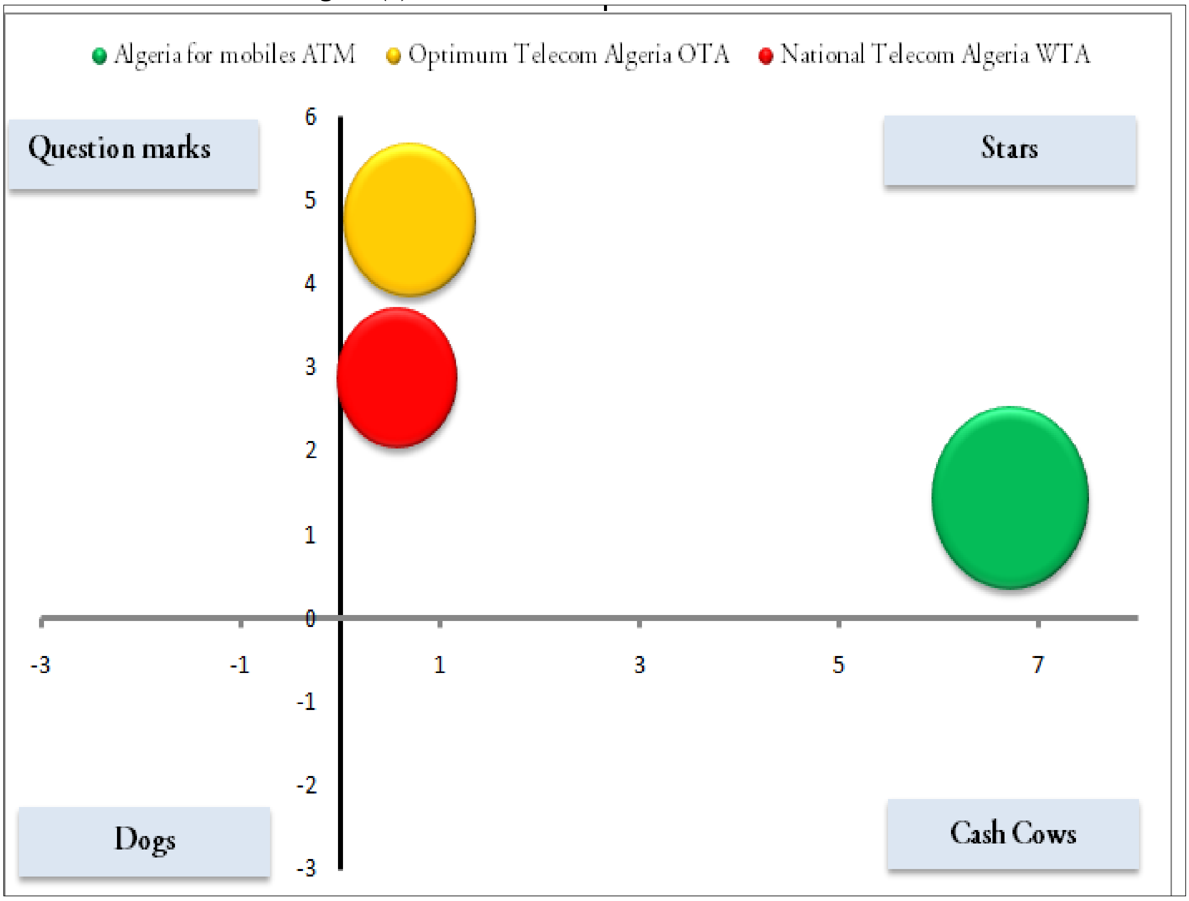
This suggests that the pre-payment WTA option is a relatively strong and dominant player in the Algerian Mobile Voice Call Market. It has a significant market share and is experiencing high growth. To maintain this position, the pre-payment WTA option may require strategic investments to defend its market leadership and capitalize on the growing demand.

- **Post-payment WTA:**

The small red circle represents the post-payment WTA option. This circle is positioned in the bottom right quadrant, which corresponds to the "Cash Cows" stage of the BCG matrix.

This positioning indicates that the post-payment WTA option is a mature and stable segment with a strong market share, but a low growth rate. It is likely generating substantial cash flow for the business, but may not be a high-priority investment area going forward. The strategic focus for the post-payment WTA option may be to maintain its current market position and optimize its operations to maximize the cash flow it generates.

Figure (4):BCG matrix of Mobile Voice Call Market.



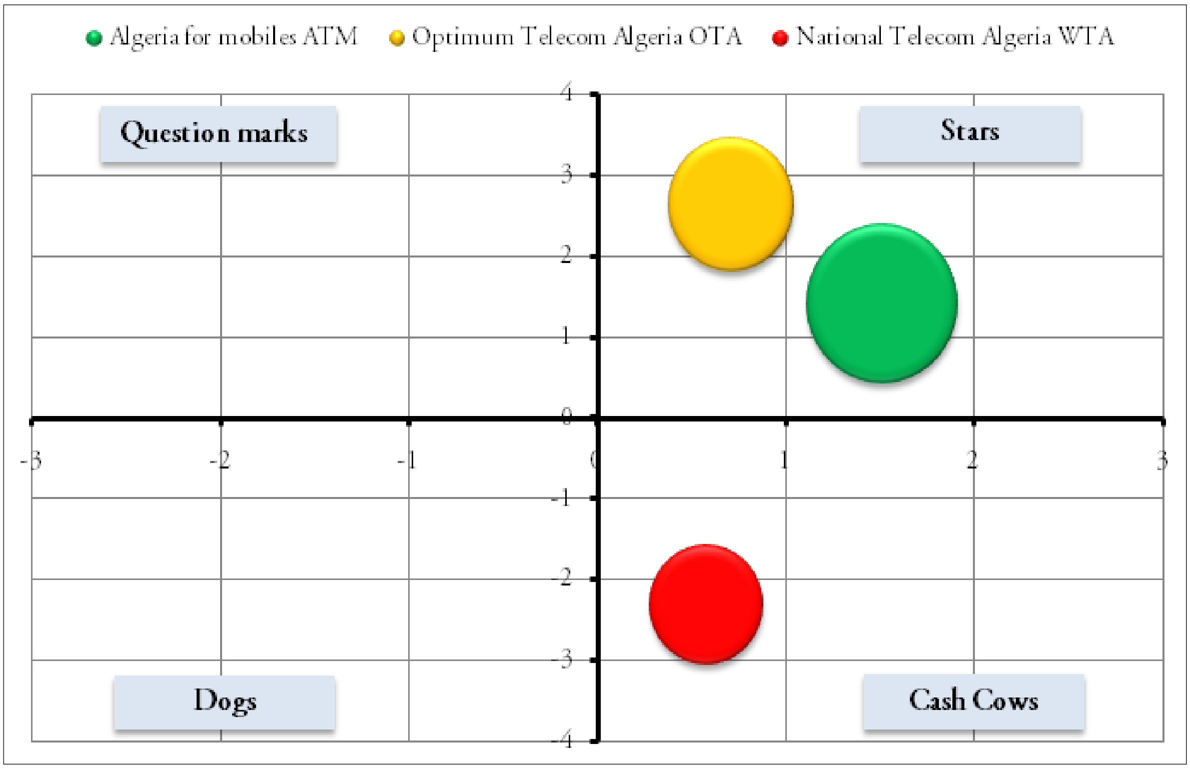
Source: created by the authors.

The green circle representing Algeria for mobiles ATM is positioned in the "Stars" quadrant of the BCG matrix, indicating it has a high market share and high growth rate. However, this company is ranked last in the market in terms of growth rate.

The orange circle representing Optimum Telecom Algeria OTA is also situated in the "Stars" quadrant. Optimum Telecom has a high market share, though lower than that of Algeria for mobiles ATM, and the highest growth rate among the companies in the market. Circled in red, National Telecom Algeria WTA is likewise positioned in the "Stars" quadrant. National Telecom has a high market share, but its growth rate is relatively high, falling between that of Optimum Telecom Algeria OTA (the highest) and Algeria for mobiles ATM (the lowest).

Overall, the BCG matrix positioning shows that Algeria for mobiles ATM is ranked first in terms of size and market share, but last in terms of growth rate. Optimum Telecom Algeria OTA is ranked second in size and share, but first in growth rate. Finally, National Telecom Algeria WTA is ranked last in size and share, but second in growth rate.

Figure (5):BCG matrix of Mobile internet Market.



Source: created by the authors.

Algeria for mobiles ATM is in the "Stars" quadrant, indicating it has a highest market share in a high-growth market.

Optimum Telecom Algeria OTA is in the "Stars" quadrant, meaning it has a high market share with a highest-growth in mobile internet market.

National Telecom Algeria WTA is in the "Cash Cows" quadrant, suggesting it has a high market share in a low-growth in market.

This BCG matrix analysis provides insights into the competitive dynamics and relative positions of the three mobile internet companies in the Algerian market.

Conclusion

The analysis of the Mobile Voice Call Market in Algeria reveals distinct dynamics among the three companies—Algeria for Mobiles ATM, Optimum Telecom Algeria OTA, and National Telecom Algeria WTA—across two service types: pre-payment and post-payment voice calls.

- Pre-payment ATM: Positioned as a "Star," this segment demonstrates strong market share and stable growth. Its transition towards the "Cash Cows" stage indicates a mature market, suggesting that while it is currently performing well, ongoing strategic investments will be necessary to sustain its leadership.
- Post-payment ATM: Classified as a "Question Mark," this segment shows potential for growth but currently holds a low market share. With rising demand, the company should focus on strategic investments and marketing initiatives to elevate this segment towards the "Stars" quadrant.
- Pre-payment and Post-payment OTA: The pre-payment OTA option is also in the "Stars" quadrant, indicating strong performance. However, the post-payment OTA is

showing signs of weakness and may require immediate strategic attention to enhance its market position.

- Pre-payment WTA: This segment is a strong player in the "Stars" category, benefiting from high growth and market share. Continued strategic investments are essential to defend its position.
- Post-payment WTA: Positioned in the "Cash Cows" quadrant, this segment is stable but with low growth. The focus should be on optimizing operations to maximize cash flow while maintaining market share.
- Overall, the BCG matrix highlights the competitive landscape of the Algerian mobile voice call market, emphasizing the need for targeted strategies to enhance growth and maintain market positions in an evolving environment. Companies should prioritize investments in high-growth segments while optimizing their operations in more mature areas to ensure sustained success.
- Algeria for Mobiles ATM: Positioned in the "Stars" quadrant, this company boasts the highest market share but ranks last in terms of growth rate. This indicates a mature market presence, suggesting that while it holds a dominant position, it may need to innovate or enhance its offerings to stimulate further growth.
- Optimum Telecom Algeria OTA: Also in the "Stars" quadrant, Optimum Telecom has a strong market share and leads in growth rate. This positions the company favorably for future expansion, emphasizing its potential to capture additional market segments and solidify its competitive advantage.
- National Telecom Algeria WTA: Like the others, National Telecom is categorized as a "Star," with a high market share and a growth rate that falls between the other two companies. Although it has a solid position, its relatively lower market share suggests that it may need to implement strategic initiatives to enhance its visibility and performance in the market.

The BCG matrix analysis of the Mobile Internet Market in Algeria reveals distinct positions and strategic implications for the three major companies:

- Algeria for Mobiles ATM: Positioned in the "Stars" quadrant, this company enjoys the highest market share in a high-growth environment. This strong position indicates robust performance and significant opportunities for continued expansion. To maintain its leadership, Algeria for Mobiles ATM should focus on innovation and customer engagement strategies.
- Optimum Telecom Algeria OTA: Also classified as a "Star," Optimum Telecom possesses a high market share alongside the highest growth rate in the mobile internet market. This favorable position suggests that the company is well-equipped to capture emerging opportunities and should prioritize investment in marketing and service enhancements to solidify its competitive advantage.
- National Telecom Algeria WTA: Located in the "Cash Cows" quadrant, National Telecom has a strong market share but operates in a low-growth environment. While it generates consistent cash flow, the company may need to reassess its growth

strategies to avoid stagnation. Focusing on optimizing operations and enhancing service offerings will be crucial for maintaining profitability.

- The BCG matrix provides valuable insights into the competitive dynamics of the Algerian mobile internet market. Algeria for Mobiles ATM and Optimum Telecom Algeria OTA are well-positioned for growth, while National Telecom Algeria WTA must strategically navigate its mature market status. To thrive in this competitive landscape, all companies should leverage their strengths and adapt to market changes to maximize their potential.

References

ARPCE. (2023). *Documents and Reports, Official Bulletins*. Retrieved 9 13, 2024, from The Postal and Electronic Communications Regulatory Authority: https://www.arpce.dz/fr/doc/bo

Ayad, F. (2012). An Evolutionary Game For Algérian Télécommunication Service Provides. *Revue des reformes Economique et intégration dans l'économie mondiale*, *6* (12), pp. 19-44.

Daga, R., Muhammad, N., Suwandaru, R., & Nubil, A. (2023). Marketing Strategy Analysis of Xtra Combolite and Xtra Hotrod Special Product at PT XL Axiata with the Application of the Boston Consulting Group Matrix. *International Journal of Social Science and Education Research Studies, 3* (9), pp. 2770-2790.

djezzy. (2024). *Résultats financiers de Djezzy*. Consulté le 7 22, 2024, sur https://www.djezzy.dz/: https://www.djezzy.dz/djezzy/informations-financieres/

EduGorilla. (2022). *UGC NET Management Paper II Chapter Wise Note Book | Complete Preparation Guide*. N.p., .

Hamal, A. N. (2022). Modeling Competitiveness Strategy With Game Theory: A Proposed Plan For The Case Of Wireless Telecommunication Market In Algeria. *مجلة اقتصاديات الاعمال والتجارة*, *7* (1), pp. 713-730.

Hinson, R. E., Adeola, O., Limbu, Y. B., & Mogaji, E. (2020). *Marketing in Healthcare-Related Industries. États-Unis: , , 2020.* Usa: Information Age Publishing, Incorporated.

Johanning, V. (2022). *IT Strategy: Making IT Fit for the Digital Transformation.*Germany: Springer Fachmedien Wiesbaden.

le chiffre d'affaires. (2024). *Ooredoo Algérie enregistre une progression de 6% de son chiffre d'affaires.* Consulté le 7 22, 2024, sur le chiffre d'affaires: https://lechiffredaffaires.dz/ooredoo-algerie-enregistre-enregistre-une-progression-de-6-chiffre-daffaires/

Maheshwari, S., & Agarwal, A. (2020). *Strategic Management: A publication of SBPD Publishing House.* USA: SBPD Publishing House.

Menad, M. م. (2023). The Internet Market in Algeria within the Context of Oligopoly: A Case Study of Algeria (2014-2021). *Thesis Submitted in Fulfillment of the Requirements for the Doctorate Degree in Economic Sciences, Specialization:*

Economic Analysis and Foresight . (س. ا.-2.), Trans.) "Faculty of Economic Sciences, Commercial Sciences, and Management Sciences.", Mostaganem, Algeria: University of Mostaganem.

mobilis. (2023). *Mobilis réalise le meilleur chiffre d'affaire dans l'histoire des opérateurs TELCO en Algérie.*Consulté le 07 22, 2024, sur www.mobilis.dz/: https://www.mobilis.dz/communique_presse.php?Id_Communique=985

Schawel, C., & Billing, F. (2012). BCG-Matrix. In *Top 100 Management Tools* (pp. 32-34). Wiesbaden: Gabler Verlag.

Shri Bhagavatananda, G. (2020). *The Governance: A 10 Days Intro Course for the Beginners.* india: notion press.

Singh, N., & Gauri Singh, G. (2024). *Strategic Management & Business Policy.* e-Book for BBA 6th Sem for U.P. State Universities: Thakur Publication Private Limited.

Srivastava, R., & Prakash, A. (2011). Growth-Share Matrix as a Tool for Portfolio Planning: Evidence from the Indian Telecommunication Services Industry. *IUP Journal of Business Strategy, 8* (2), pp. 22-33.