

Mobile Network Subscribers Market Share Evolution Of Telecommunication Companies In Senegal From 1996 To 2022

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Abstract—This research examines the evolution of market shares of telecommunications companies in Senegal over a period of 26 years, from 1996 to 2022. The study focuses on subscriber's market share as a key indicator of mobile network operators' performance and competitiveness. It analyzes the mix market share for the three main mobile network operators (ORANGE, FREE, and EXPRESSO) consolidation periods, key success factors, and challenges faced by these companies in a dynamic and competitive environment.

The analysis reveals a significant evolution in the telecommunications landscape in Senegal, marked by the emergence of new players, the advancement of technologies, the diversification of offerings, and the increase in connectivity. Major historical operators had to contend with growing competition, stimulating innovation and service improvement to meet changing consumer needs.

Key events such as the introduction of 3G and 4G technology, had a significant impact on market share distribution and companies' differentiation strategies. Regulatory policies such as mobile telephony licensing, investments in infrastructure, brand changes, order entry, strategic partnerships, and operators' number of years of experience also influenced the sector's competitive dynamics.

In conclusion, this research highlights the complex and dynamic evolution of market shares of telecommunications companies in Senegal, highlighting the technological, strategic, and regulatory factors that have shaped this sector over the years.

Keywords—Market share; Senegal; Telecommunication; Orange; Free; Expresso

I. INTRODUCTION

Senegal is a country located at the western tip of the African continent. Indeed, Senegal holds an important position in terms of economy within the West African sub-region. Its favorable geographical location and political stability make it one of the most industrialized countries on the African continent, with the presence of several multinational companies.

Senegal has capitalized on its strengths to develop a dynamic and promising economy, thus contributing to the overall growth of the region. Telecommunications constitute a very important sector in Senegal's economic life. Between 2002 and 2010, the contribution of telecoms to the GDP (Gross Domestic Product) was three times higher than the contribution of financial services and construction. In 2010, the total revenues of the telecommunications industry in Senegal amounted to 1.4 billion US dollars, representing 10.8% of the national GDP. This significant contribution reflects the growing importance of the telecommunications sector in the Senegalese economy. Telecommunications also generated more than 70,000 jobs in the country (Katz et al, 2014).

The three main mobile network operators: ORANGE, FREE, and EXPRESSO, have greatly contributed to the development of telecommunications with a mobile penetration rate of 117% in 2022 (ARTP, 2024).

Since the launch of the first mobile network, ALIZE, in 1996, SONATEL held a monopoly on telecommunications services until 1999 with the launch of HELLO (which later became TIGO and then FREE) (Sagna, 2008).

In the years following, these two operators shared the market until 2009 when a third operator, operating under the brand EXPRESSO, entered the market. Since then, the telecommunications market has been highly competitive with a multitude of offers for consumers.

According to the Boston Consulting Group (1970), most companies consider not only profit and sales volume but also market share in their strategic thinking and planning. They believe that gaining market share is essential to ensure long-term profitability. This strategic approach aims to strengthen their competitive position in the market and promote the continuous growth of the company.

Market share represents the slice or proportion of a market that a company or organization captures. It serves as a crucial gauge of the competitiveness of the company's offerings. Additionally, expanding market share can enable a company to scale up its operations, leading to enhanced profitability (Kanellos et al, 2022).

In recent years, regulatory authorities (Telecommunications and Postal Regulation Agency (ARTP)) have been publishing market shares of operators, and most reports focus on analyses of the past 2 or 3 years, sometimes even quarterly analyses. Therefore, it would be more interesting to delve deeper into the study by analyzing the market shares of each operator since their entry into the Senegalese telecommunications sector and their historical behavior over the years.

This is why in this study, we will track the evolution of market shares of the three main operators (ORANGE, FREE, and EXPRESSO) since the launch of the mobile telecommunication network in Senegal, to better assist them in improving their competitive position for the benefit of the population.

II. MATERIALS AND METHODS

The study will focus on the three main operators in the country: SONATEL, Saga Africa Holdings Limited, and SUDATEL. SONATEL began its mobile telephony activities in 1996 under the ALIZE brand. However, by the end of 2005, there was a brand evolution, and it became ORANGE from that date. In 2009, SONATEL launched its new offer "KIRENE avec ORANGE" in partnership with KIRENE Mobile from the KIRENE Group.

In 1999, Millicom International Cellular launched the second mobile Network operator in Senegal under the HELLO brand through the company SENTEL. In 2006, there was a brand evolution with the launch of TIGO. Later, in 2018, a consortium of entrepreneurs acquired the operator SENTEL, renamed it Saga Africa Holdings Limited, and operated it under the FREE brand in Senegal.

In 2009, the Sudanese group SUDATEL launched the third mobile phone network operator in Senegal under the EXPRESSO brand.

To better study all these events that have occurred in the telecommunications sector in Senegal and for convenience purposes, we will group them into physical entities (ALIZE/ORANGE, HELLO/TIGO/FREE, and EXPRESSO). The study will be divided into three periods:

- From 1996 to 2005: This period represents the first decade of operation of mobile phone operators with only 2 active operators at the time, ALZE and HELLO.
- From 2006 to 2015: This period represents the second decade of operators with the entry of a third operator in the market. The launch of a local operator in 2013, which started its activities in the northern part of the country (in the Matam region) and officially operated under the "HAYO" brand.
- From 2016 to 2022: This period represents the third decade of operators but also with the arrival of a virtual operator (PROMOBILE) in the market.

Data collection and analysis

The data were collected through various reports from the ARTP, annual reports of operators over the years, and some scientific publications.

The data were analyzed using Excel by plotting the market share evolution graph over three different decades, with averages and standard deviations of market shares over the years. We will also make projections for the years 2023, 2024, and 2025 to show what can be expected for these upcoming years.

Each study period will have a specific analysis. We will also study the mobile network penetration rate to better assess market potential.

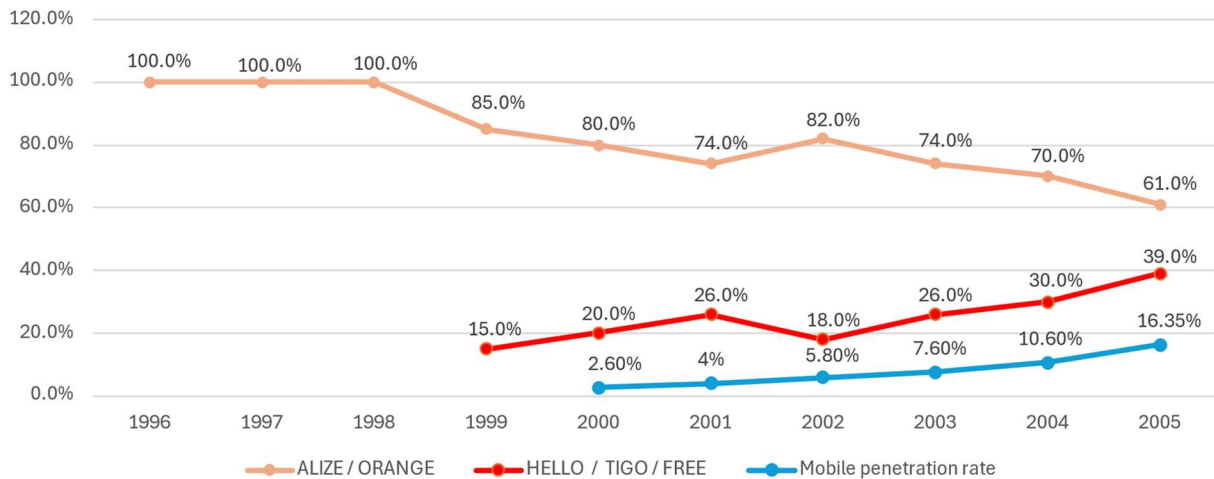
By analyzing historical data, it becomes possible to project into the future and formulate anticipations regarding future values or results. This approach helps identify risks by examining past behavioral patterns, enabling preventive or mitigative measures. Additionally, this analysis allows for the evaluation and identification of patterns, trends, or changes in data over time. Understanding these patterns, telecom decision-makers can make more informed decisions.

III. RESULTS

Period from 1996 to 2005

From 1996 to 1999, ALIZE was the only mobile phone Network operator, holding 100% of the market share. However, it was only in 1999 that a second operator entered the market operating under the HELLO brand. It was able to capture 15% of market share in its first year, and steadily grew in the following years. In 2001, it managed to reverse the trend by increasing its market share from 74% to 82%, but in the subsequent years, HELLO maintained the growth of its market share until it reached a pic of 39% in 2005, compared to 61% for ORANGE.

The low mobile penetration rate shows the potential of the market, rising from 2.6% in 2000 to 15.35% in 2005.



Data source: Sagna (2010), Rapport annuel Sonatel (2001), ARTP (2004), ARTP (2006)

Fig. 1. Senegal telecom mobile subscribers market share from 1996 to 2005

If a thorough analysis is conducted during this period, it is true that ALIZE was able to accumulate more years of experience. An analysis of the average market shares and standard deviations yields the table below.

TABLE I. Number of years in service, average market shares, standard deviations of operators from 1996 to 2005.

	Number of years in existence in 2005	Average Market Shares	Standard Deviations
ALIZE / ORANGE	9	82.6%	13.7%
HELLO / TIGO / FREE	6	24.9%	8.1%

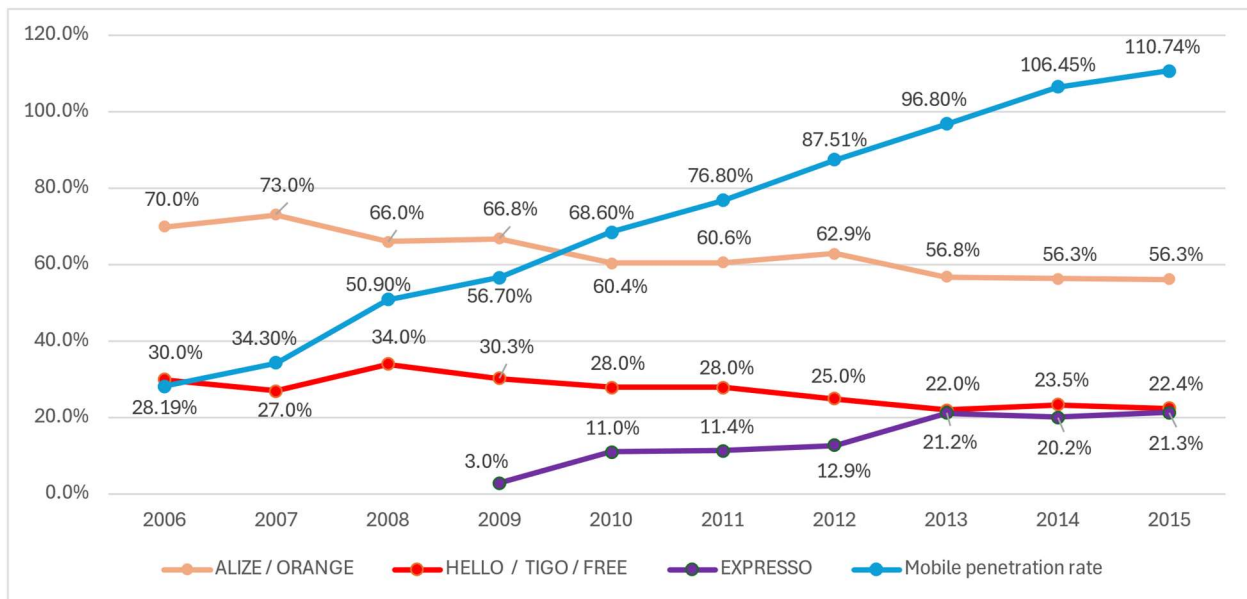
The average market shares during this period for ALIZE are 82.6% and 24.9% for HELLO.

The standard deviation of 13.7% for ALIZE shows that it had a greater dispersion around the average due to the entry of a new competitor in the market. These standard deviation values also indicate market flexibility with greater rooms to grow.

Period from 2006 to 2015

This second decade is marked by a rebranding of the first two operators, ALIZE becoming ORANGE and HELLO becoming TIGO. ORANGE was able to gain a good market share, increasing from 61% in 2005 to 70% in 2006. The brand change seemed to benefit ORANGE more than TIGO in that year. This market share growth was maintained by Orange until 2008, the year of the launch of 3G technology by ORANGE. TIGO was able to gain some market share, increasing from 27% in 2007 to 34% in 2008. The year 2009 marks the entry of a third operator who came to share the market with its competitors by launching innovative 3G technology services. EXPRESSO started with a 3% market share, TIGO experienced a decrease of -11.7%. However, ORANGE paradoxically recorded an increase of + 1.3% (from 60% to 60.8%). This market share increase from ORANGE could be justified by its strategic partnership with KIRENE Group that was supposed to compete TIGO’s low cost 2G offers while ORANGE was focused on the ‘new threat’ (EXPRESSO) with its new 3G offers. The year 2010 marked the confirmation year for EXPRESSO, with an increase in market share from 3% to 11%, leading to a decrease in the shares of ORANGE and TIGO. The following years will witness a continuous growth in EXPRESSO's market share with exceptional performance in 2013: 21.2% for Expresso, 22% for TIGO and 56.8% for ORANGE. In December 2013, TIGO launched its innovative 3G+ technology offers, resulting in a gain in market share in 2014 (+6.8%), while its competitors experienced a decrease during that period (ORANGE -0.88%, EXPRESSO -4.7%). These different market shares were almost maintained in 2015.

The mobile network penetration rates over the years show a growing market. This rate reached 106.45% for the first time in 2014. This rate exceeded 100% because a person can have 2 or more Subscriber Identity Module (SIM) cards with multiple operators at the same time.



Data source: ARTP

Fig. 2. Senegal telecom mobile subscribers market share from 2005 to 2015.

A thorough analysis during this period shows that ORANGE remains dominant despite its two aggressive competitors.

TABLE II. Number of years in service, average market shares, standard deviations of operators from 2006 to 2015.

	Number of years in existence in 2015	Average Market Shares	Standard Deviations
ALIZE / ORANGE	19	62.9%	5.9%
HELLO / TIGO / FREE	16	27.0%	3.8%
EXPRESSO	6	14.4%	6.8%

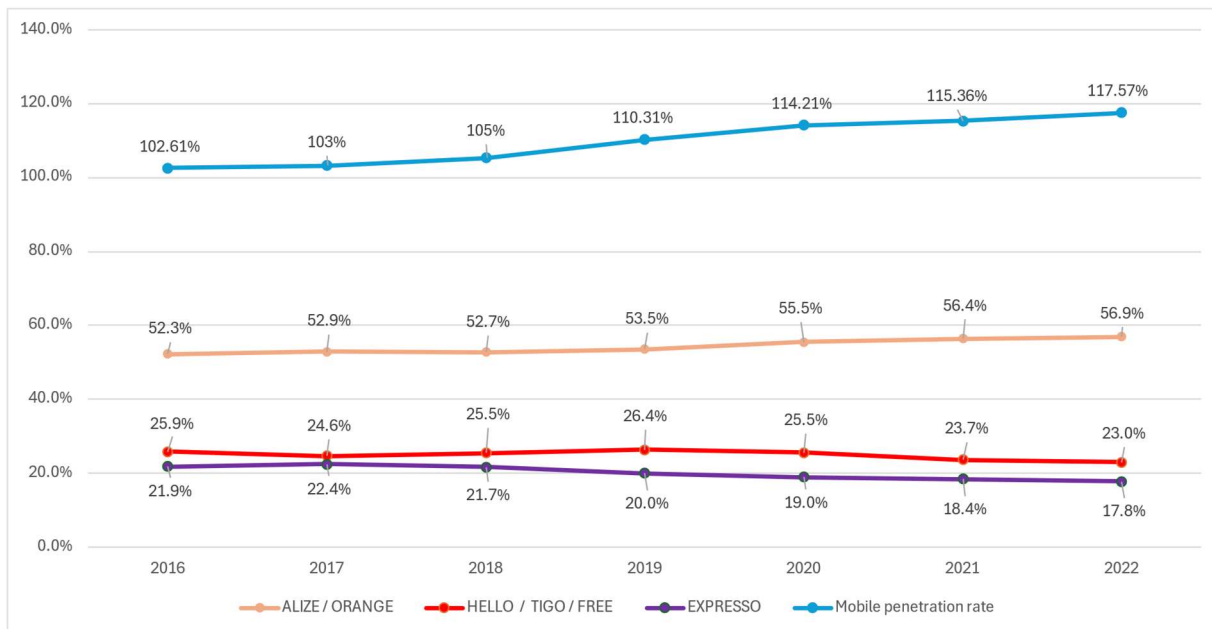
ORANGE obtained an average market share of 62.9% during this period, TIGO 27%, and EXPRESSO 14.4%. There is also a reduction in standard deviations compared to the previous decade. EXPRESSO has a larger standard deviation due to its greater growth potential compared to its competitors since it is newer to the market. Orange comes in second with 5.9% and finally TIGO completes the loop with a 3.8% standard deviation.

Period from 2015 to 2022

This third decade marks a certain maturity of the operators as they have accumulated at least 5 years of experience, and market shares have not undergone significant variations. From 2016 to 2019, ORANGE increased its share from 52.3% to 53.5%, TIGO from 25.9% to 26.4%, and unfortunately for EXPRESSO from 21.9% to 20%. The year 2019 also marks the launch of FREE following the acquisition of TIGO/SENEL, which now becomes FREE and launches its 4G technology services in Senegal, resulting in a +3.5% increase in market share. In 2020 due to the Covid-19 pandemic lockdowns, ORANGE gained +3.7% of market share because of its competitor had an acquisition policy mostly based on street vendors or freelancers. In the following years, ORANGE recorded a slight growth in market share, while EXPRESSO and FREE experienced a slight decrease in market share.

It is worth noting that in 2021, there was an entry into the market of a virtual operator PROMOBILE, whose market share varies between 1% and 2%.

The mobile network penetration rate continues to strengthen, with an increase in the number of people owning more than 2 SIM cards.



Data source: ARTP

Fig. 4. Senegal telecom mobile subscribers market share from 2005 to 2015

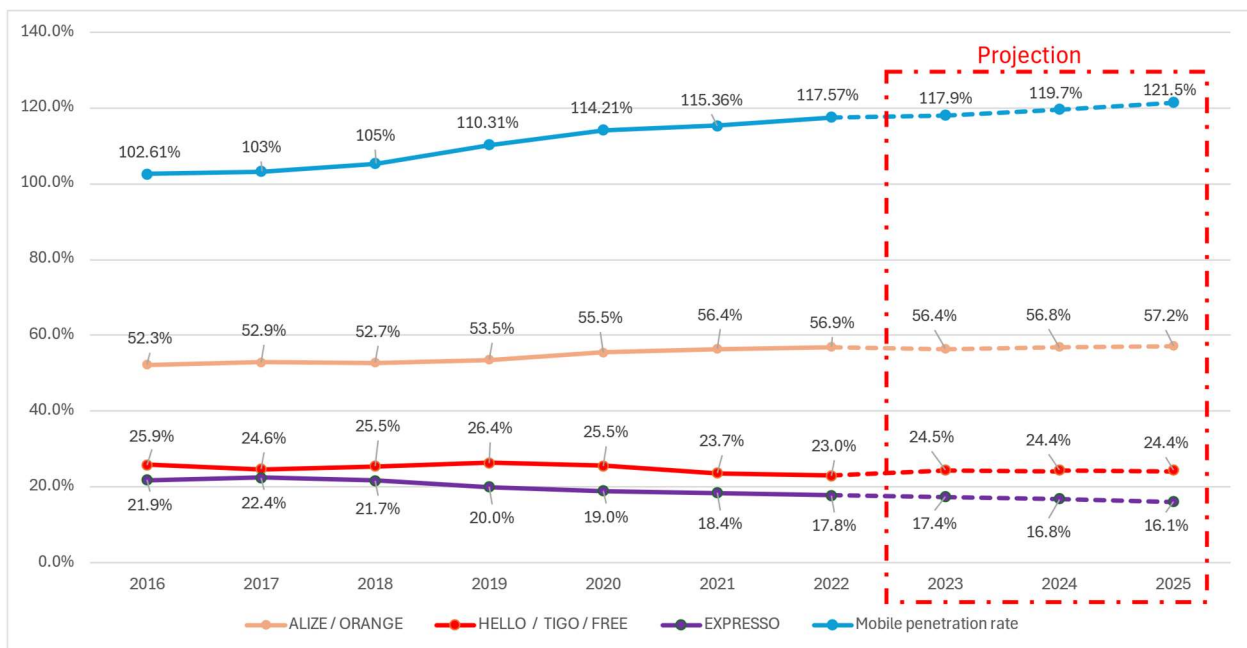
ORANGE remains dominant throughout this decade, with market shares showing low variation over the years.

TABLE III. Number of years in service, average market shares, standard deviations of operators from 2016 to 2022.

	Number of years in existence in 2022	Average Market Shares	Standard Deviations
ALIZE / ORANGE	26	54.3%	1.9%
HELLO / TIGO / FREE	23	24.9%	1.2%
EXPRESSO	13	20.2%	1.8%

We observe almost stable market shares during this period. The low standard deviations indicate a mature market with low room to grow.

A projection of the data for 2023, 2024, and 2025 shows roughly the same trends for the next 3 years, with ORANGE projected at 57.2%, FREE at 24.4%, and EXPRESSO at 16.1%.



Data source: ARTP

Fig. 5. Senegal telecom mobile subscribers market share from 2016 to 2022 with a projection for 2023, 2024, and 2025.

IV. DISCUSSIONS AND CONCLUSIONS

This study, focused on the evolution of market shares in terms of mobile network subscribers of the three main mobile network operators in Senegal from 1996 to 2022, has shed light on the following points:

- The number of years of experience in the telecommunications sector is a determining factor. Being the first on the telecom market provides a competitive advantage because there is an emotional attachment between a person and their phone number, making them hesitate before switching operators. The introduction of number portability in 2015 in Senegal, allowing customers to change operators while keeping their phone number, did not significantly impact market share distribution. The ranking of operators in terms of market share remains the same as their order of entry into the market (ORANGE, FREE, EXPRESSO). This can confirm that it is difficult for challengers to compete with market leader (He et al, 2006).

- The primary goals for subscription-based companies like telecom companies revolve around gaining new subscribers and retaining existing ones, as the company's profits are directly tied to its subscriber count. That's why decreasing the number of churners is so important (Bahnsen et al, 2015).
- The first decade of a new operator's existence in a competitive market is the key period to establish supremacy. This is when their growth potential is at its maximum, and it's crucial to gain the trust of customers to build loyalty considering it is usually lower in term of costs to retain existing than acquiring new subscribers (Kim et al, 2020).
- Brand changes do have a significant impact on market shares. ORANGE underwent a brand change once, and Free twice, with a significant effect on market share. So competitive strategies can influence brand market share (Rumaniuk et al, 2018).
- The launch of 3G or 4G technology has a considerable impact on market share composition in the year of their service launch. Those technologies have also an impact of customer satisfaction (Haq et al, 2023).
- Entry of a new operator into the market after acquiring its operating license from the government (ARTP) has a significant impact on mix market share in Senegal.
- Strategic partnership can help increase market share, ORANGE's strategic partnership with KIRENE group help contain potential market share loss with entry of EXPRESSO in 2009.
- The third decade shows a mature market, with a very high mobile penetration rate and relatively stable market shares. This situation does not favor the entry of a new operator. For instance, the virtual operator PROMOBILE struggled to reach 3% market share after two years in 2021, while FREE and EXPRESSO were at 20% and 11% market share respectively in their second year of existence. The mobile penetration rate is a crucial indicator of growth potential in terms of market share; the lower it is, the more room operators must increase their share. The high level of mobile penetration rate is a sign that it is reaching maturity (Li et al, 2012).

However, some limitations can be noted, including:

- Data collection, as data is sparse and mostly available for the last decade. The research was meticulous, cross-referencing data from various sources and archives to confirm the accuracy of the data.
- Difficulty in making an exhaustive interpretation of market share fluctuations due to probably competitive and strategic reasons that prevent operators from openly communicating about them. It's challenging to find a report or a statement from an operator where the reasons for a change in market share are discussed.
- Mobile network penetration rate data between 1996 and 1999 is not available.

This research also raises an old problematic between volume and value of customers. Market share represents the number of subscribers. Does having the largest number of subscribers mean generating more revenue? Therefore, it would be interesting to conduct research on the average revenue per subscriber for each operator and to study market share in terms of revenue per operator since their entry into the market. This information could lead to a study on market share in terms of quality customers or high-value customers, which could be very interesting decision-makers in the telecom industry in Senegal.

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