



Cost Analysis and Cost Breakdown (CA-CB)

Project Name: SMS Gateway System

Client: Jose Pardillo Rodriguez

Version: 1.0

Date: August 14, 2024

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1. Introduction

This cost analysis provides a detailed breakdown of the estimated costs associated with developing, deploying, and maintaining the SMS Gateway System. The system is designed to handle a large amount of SMS traffic, with the only bottleneck being the number of available SIMs.

2. Assumptions

The following assumptions are made for the cost analysis:

- The SMS Gateway will be deployed on a cloud platform (e.g., AWS).
- The system will handle an average of 90,000 to 180,000 SMS messages per month, depending on the number of smartphones (3 or 6).
- The project will be managed by a single developer with skills in container orchestration, Golang, Python, Kotlin, and system administration.
- Development will be completed in 4 months, followed by an ongoing maintenance phase.
- The cost of each smartphone is ₱2,500.
- Telecom costs or the load promo for each SIM will be ₱99 per month.
- Cloud Server Setup (AWS) is a one-time cost of ₱6,000.
- Cloud Servers (AWS EC2) quantity is 2 pieces.



3. One-Time Costs

3.1 Development Costs

ITEM	QUANTITY	UNIT COST	TOTAL COST	DESCRIPTION
Software Development	1	₱43,000	₱43,000	Cost for developing the SMS Gateway system. Including the app.
System Architecture Design	1	₱3,000	₱3,000	Design of the system architecture.
API Development and Integration	1	₱3,000	₱3,000	API creation and integration with telecoms.
Security Implementation	1	₱1,500	₱1,500	Security protocols and encryption setup.
Database Setup and Optimization	1	₱1,500	₱1,500	Database schema design and optimization.
Total Development Costs	-	-	₱52,000	

3.2 Infrastructure Setup

ITEM	QUANTITY	UNIT COST	TOTAL COST	DESCRIPTION
Cloud Server Setup (AWS)	1	₱6,000	₱6,000	One-time cost for setting up 1 cloud server on AWS.
Total Infrastructure Setup			₱6,000	



4. Hardware Purchase

ITEM	QUANTITY	UNIT COST	TOTAL COST	DESCRIPTION
Smartphones (Endpoints)	6	₱2,500	₱15,000	Purchase of 6 smartphones with 4G capability.

5. Recurring Costs

5.1 Cloud Services

ITEM	QUANTITY	UNIT COST	Total Monthly Cost (in ₱)	Total Annual Cost (in ₱)	DESCRIPTION
Cloud Servers (AWS EC2)	2	₱600	₱1,200	₱14,400	Monthly and annual cost for 2 cloud servers on AWS.

5.2 Telecommunications

ITEM	QUANTITY	UNIT COST	Total Monthly Cost (in ₱)	Total Annual Cost (in ₱)	DESCRIPTION
Telecom Costs (SIM cards)	6	₱99	₱594	₱7,128	Monthly and annual costs for telecom services (SIM cards) at ₱99 per month per SIM.

5.3 Total Recurring Costs

CATEGORY	TOTAL MONTHLY COST	TOTAL ANNUAL COST
Cloud Services	₱1,200	₱14,400
Telecommunications	₱594	₱7,128
Total Recurring Costs	₱1,794	₱21,528



6. Total Cost Summary

Cost Type	Total Cost
Total One-Time Costs	₱58,000
Total Recurring Costs (Monthly)	₱1,794
Total Recurring Costs (Annual)	₱21,528
Hardware Purchase	₱15,000

7. Conclusion

The estimated total one-time cost for developing and deploying the SMS Gateway System is ₱58,000. Additionally, the system will incur recurring costs of approximately ₱1,794 per month or ₱21,528 per year for cloud services and telecommunications. The hardware purchase for the smartphones (endpoints) is a one-time cost of ₱15,000. These costs should be considered in budgeting and financial planning for the project.

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Cost Forecast and Analysis for SMS Gateway System

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Assumptions

- SIM Card Load Cost: ₱99 per SIM card per month

Total Recurring Costs (Monthly) Calculation

Assumption 1: 180,000 SMS per Month (6 Devices)

- SIM Load Cost: $₱99 * 6 = ₱594$
- Cloud Services Cost: ₱1,200 (for 2 cloud servers)
- Total Recurring Costs (Monthly): $₱1,200 + ₱594 = ₱1,794$

Assumption 2: 90,000 SMS per Month (3 Devices)

- SIM Load Cost: $₱99 * 3 = ₱297$
- Cloud Services Cost: ₱1,200 (for 2 cloud servers)
- Total Recurring Costs (Monthly): $₱1,200 + ₱297 = ₱1,497$

Assumption 3: 60,000 SMS per Month (2 Devices)

- SIM Load Cost: $₱99 * 2 = ₱198$
- Cloud Services Cost: ₱1,200 (for 2 cloud servers)
- Total Recurring Costs (Monthly): $₱1,200 + ₱198 = ₱1,398$

Assumption 4: 30,000 SMS per Month (1 Device)

- SIM Load Cost: $₱99 * 1 = ₱99$
- Cloud Services Cost: ₱1,200 (for 2 cloud servers)
- Total Recurring Costs (Monthly): $₱1,200 + ₱99 = ₱1,299$



Cost per SMS Calculation

Formula

$$\text{Cost per SMS} = \frac{\text{monthly recurring cost}}{\text{x number of sms}} = \text{Total cost per SMS}$$

Assumption 1: 180,000 SMS per Month

$$\text{Cost per SMS} = \frac{\text{₱ 1,794}}{180,000} = \text{₱ 0.00997 per SMS}$$

Assumption 2: 90,000 SMS per Month

$$\text{Cost per SMS} = \frac{\text{₱ 1,497}}{90,000} = \text{₱ 0.01663 per SMS}$$

Assumption 3: 60,000 SMS per Month

$$\text{Cost per SMS} = \frac{\text{₱ 1,398}}{60,000} = \text{₱ 0.02330 per SMS}$$

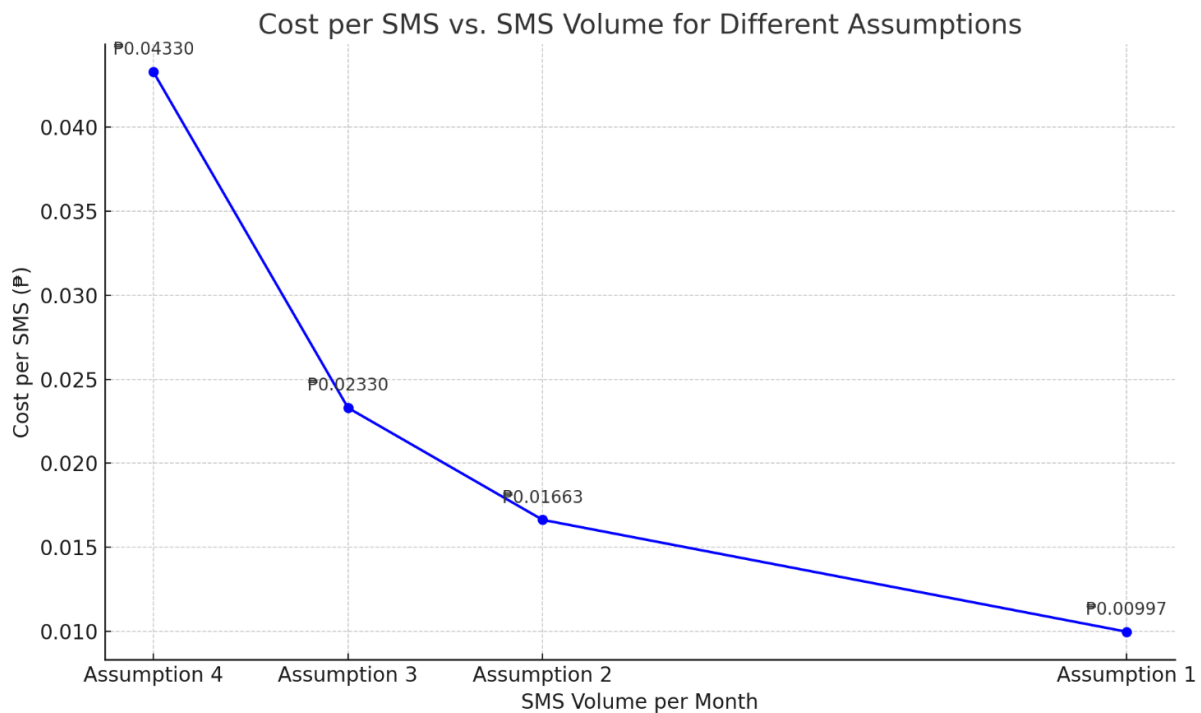
Assumption 4: 30,000 SMS per Month

$$\text{Cost per SMS} = \frac{\text{₱ 1,299}}{30,000} = \text{₱ 0.04330 per SMS}$$



Summary of Cost per SMS

- Assumption 1: 180,000 SMS per month (6 devices): ₱0.00997 per SMS
- Assumption 2: 90,000 SMS per month (3 devices): ₱0.01663 per SMS
- Assumption 3: 60,000 SMS per month (2 devices): ₱0.02330 per SMS
- Assumption 4: 30,000 SMS per month (1 device): ₱0.04330 per SMS



The x-axis represents the SMS volume per month under each assumption, and the y-axis represents the cost per SMS in Philippine Pesos.

The graph clearly shows how the cost per SMS decreases as the number of SMS messages increases, highlighting the most cost-effective scenario.



COMPETITOR ANALYSIS

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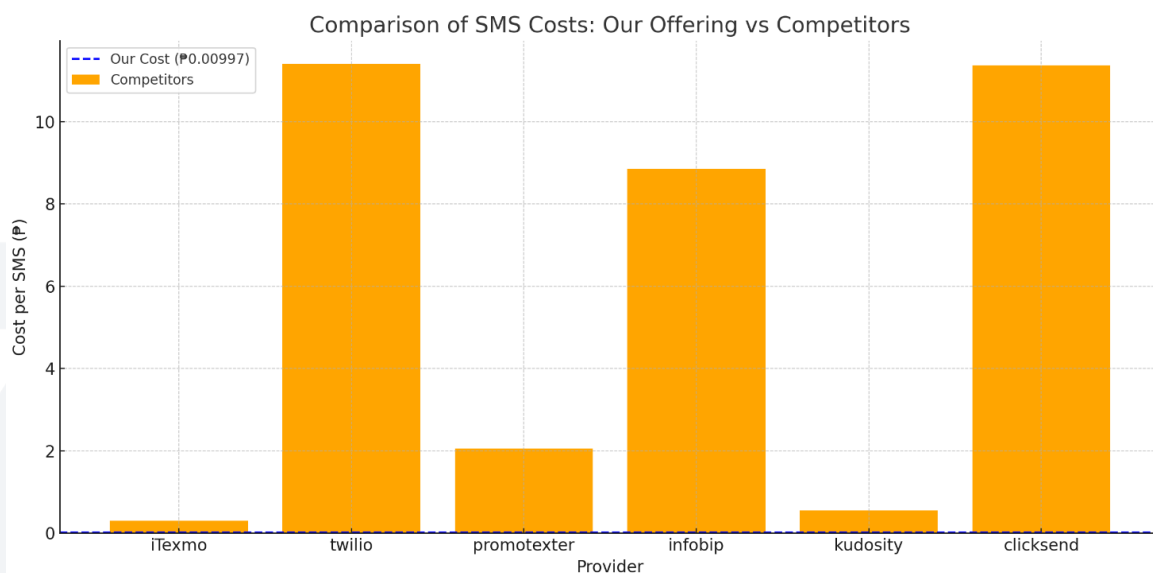
Overview

The SMS Gateway System is designed to provide a robust, scalable, and highly cost-effective solution for delivering SMS messages across various telecom networks. With the ability to handle large volumes of SMS traffic, the system leverages an efficient infrastructure that optimizes costs, particularly when compared to other providers in the market.

Cost Comparison and Analysis

In our analysis, we compared the cost per SMS of our system under Assumption 1 (180,000 SMS per month using 6 devices) with several competitors in the market. The results are as follows:

PROVIDER	COMPETITOR COST per SMS (₱)	PHP Cost Difference (₱)	Percentage Difference (%)
iTexmo	0.30	-0.29003	-96.68%
Twilio	11.40	-11.39003	-99.91%
Promotexter	2.05	-2.04003	-99.51%
Infobip	8.85	-8.84003	-99.89%
Kudosity	0.55	-0.54003	-98.19%
ClickSend	11.37	-11.36003	-99.91%





Key Insights

1. Significant Cost Savings:
 - The SMS Gateway System provides a cost per SMS of ₱0.00997, which is dramatically lower than all the competitors analyzed.
 - For instance, compared to **Twilio** and **ClickSend**, the system offers a savings of approximately ₱11.39 and ₱11.36 per SMS, respectively. This translates to a cost reduction of 99.91%.
2. Competitive Advantage:
 - Even against lower-cost providers like **iTexmo** and **Kudosity**, the system is significantly more cost-effective, with cost reductions of 96.68% and 98.19% respectively.
3. Scalability and Efficiency:
 - The system is designed to handle up to 180,000 SMS per month efficiently, ensuring that businesses can scale their messaging operations without incurring prohibitive costs. The more SMS messages sent, the greater the cost efficiency, making it an ideal solution for businesses with high-volume messaging needs.

Value Proposition

The SMS Gateway System offers unparalleled value by providing businesses with a highly scalable, reliable, and cost-effective SMS delivery platform. The significant cost savings compared to competitors ensure that businesses can allocate resources more effectively, driving profitability and enhancing their competitive edge in the market.

This system not only meets the current market demands but also positions itself as a future-proof solution that can grow alongside the business, making it an invaluable asset in any organization's communication strategy.

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Potential Cost Savings over time

Key Factors for Analysis

Competitor's Cost:

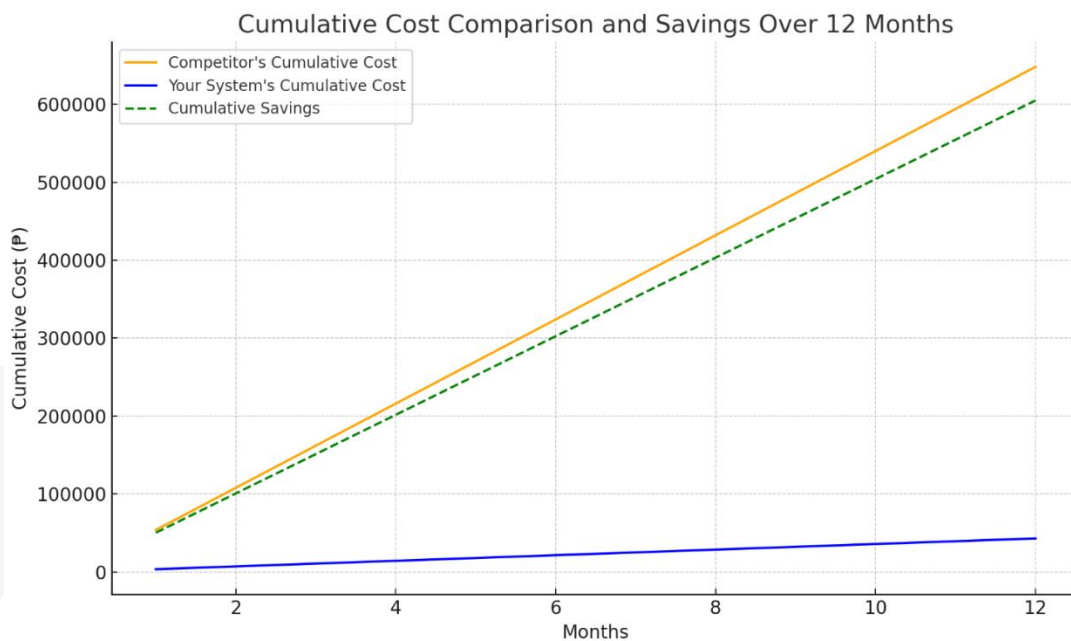
- iTexmo Cost per SMS: ₱0.30

Our Cost Structure:

- Cloud Server Cost: ₱1,200 per month for 2 servers.
- SIM Card Cost: ₱99 per SIM, varies with the number of devices.
- Our Cost per SMS: ₱0.00997 (under Assumption 1: 180,000 SMS per month using 6 devices).

Assumptions:

- SMS Volume: We will calculate savings for 180,000 SMS per month (consistent high-volume usage).
- Time Period: 12 months.





LEGEND

- Orange Line: Represents the cumulative cost of using the competitor's service (iTexmo) over 12 months.
- Blue Line: Represents the cumulative cost of using our SMS Gateway System over the same period.
- Green Dashed Line: Represents the cumulative savings achieved by using our system instead of the competitor's.

Key Insights

- The gap between the orange and blue lines shows the growing cost advantage of your system over time.
- The green dashed line highlights the significant cumulative savings, which reach over ₱600,000 by the end of 12 months.

Potential Cost Savings Over 12 Months

- Competitor's Annual Cost (iTexmo): ₱648,000
- Our System's Annual Cost: ₱21,528
- Total Savings Over 12 Months: ₱ 626,472

Analysis

By using our SMS Gateway System instead of a competitor like iTexmo, a business could save approximately ₱626,472 over the course of a year.

This significant cost reduction demonstrates the value of our system, especially for businesses that require high-volume SMS messaging.

