# Optimizing Customer Experience: Digitizing Queuing System for LGU Alaminos City

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## ABSTRACT

This study examined the enhancement of customer experience in LGU Alaminos City through the development and implementation of an advanced queuing system. The system was designed to streamline processes, minimize wait times, and improve service efficiency. By integrating modern technology and strategic design, the study assessed its impact on customer satisfaction and operational effectiveness.

A mixed-methods approach was used, incorporating quantitative data from wait-time analysis and system performance metrics, along with qualitative insights from customer satisfaction surveys and staff interviews. This comprehensive evaluation measured improvements in service flow, transaction efficiency, and overall customer experience.

The findings revealed a significant reduction in wait times and an increase in customer satisfaction. The system enhanced workflow efficiency, allowing LGU personnel to manage transactions more effectively and prioritize urgent cases. Respondents reported a more organized, transparent, and user-friendly queuing process, contributing to a positive public service experience.

This study highlights the importance of technology-driven innovations in optimizing government service delivery. The advanced queuing system proved to be an effective solution for improving service accessibility and efficiency. The insights gained can serve as a model for other local government units seeking to modernize their queuing systems and enhance customer service.

**Keywords–** Customer Satisfaction, Public Service, Queuing System, Local Government Unit (LGU), Digital Queuing System, Real-time, Web Applications;

## INTRODUCTION

In Alaminos City, where life revolves around public services, there's a constant effort to manage queues efficiently. However, long wait times often frustrate residents and strain the hardworking public service workers. This calls for a change in how queues are handled to better meet the community's needs. Research shows that making things easy for people is crucial in public service. It's not just about getting things done but doing them in a way that builds trust and shows the government cares [1].

The current system in Alaminos City, with its long lines and delays, doesn't inspire this trust, making things tough for everyone. Queuing systems represent everyday life in all business and economic systems [2]. Digital queuing systems, with their ability to track things in real time and predict needs, can make waiting times shorter and services smoother [3]. Imagine a system that not only makes things better for residents but also takes the pressure off government workers [4].

User-friendly interfaces and mobile apps can also make a big difference. They act as bridges between residents and services, giving updates on wait times and queue statuses, and even allowing people to join queues remotely—all with a simple touch [5]. These tools can make things easier for everyone, making the whole experience more pleasant [6].

By bringing together ideas from different areas like public administration and technology, we're creating a plan that's focused on people. It's about making things smoother, bringing the community together, and setting a new standard for excellent public service [7].

## METHODOLOGY

An agile software development process always starts by defining the users for a particular product and documenting a vision statement for the scope of problems, opportunities, and values to be addressed. The product owner captures this vision and works with a multidisciplinary team (or teams) to deliver on it. Several roles are involved in an agile development process.[8]. It emphasizes breaking down projects into smaller, manageable tasks that can be completed in short iterations called sprints. Each sprint typically lasts from one to four weeks, during which a specific set of tasks or features is completed. This methodology is well-suited for project like Optimizing Customer Satisfaction: Enhancing Queuing System for LGU Alaminos City, as requirements may evolve over time.

Figure 1. Agile Methodology Cycle


*https://www.hotzxgirl.com/what/what-is-agile-methodology-a-beginners-guide-layer-blog.html*

Data gathering is a key point in the research process and one that requires critical thought and careful application [9]. The process begins with an initial assessment and stakeholder engagement phase, where we conduct a thorough analysis of the current queuing system's strengths and weaknesses. Stakeholders, including LGU officials, MIS Staff, IT Experts, and Citizens, are actively engaged to gather insights and understand their needs and expectations.

Table 1. Respondents of the Study

| **Respondents of the Study** | **Number of Respondents** |
|---|---|
| treasurer’s staff | 26 |
| mis staff | 1 |
| psu alaminos it experts | 2 |

| | |
|---|---|
| citizens | 21 |
| total respondents | 50 |

Following this, we define the project scope and objectives in collaboration with stakeholders, setting specific goals such as reducing wait times, improving service efficiency, and enhancing customer satisfaction. User stories and personas are created to capture the diverse perspectives and experiences of citizens interacting with the queuing system.

The Agile planning and iterative development phase involve breaking down the project into manageable cycle, each focusing on specific features or enhancements. Cross-functional teams, including developers, designers, and stakeholders, collaborate closely to prioritize tasks and adapt to changing requirements.

Rapid prototypes of the queuing system enhancements are developed and subjected to user testing sessions with representative citizens. Feedback gathered from these sessions informs iterative improvements, ensuring that the final product meets user expectations and provides a seamless experience.

Once the prototype is refined and validated full-scale implementation begins in a phased approach starting with pilot testing and evaluation. Using the Scale of Measurements, helped us monitor the acceptance level of the system.

Table 2. Scale of Measurement

| Scale | Statistical Limit | Rating |
|---|---|---|
| 4 | 3.26 – 4.00 | excellent |
| 3 | 2.51 – 3.25 | very good |
| 2 | 1.76 – 2.50 | good |
| 1 | 1.00 – 1.75 | poor |

A feedback loop is established to collect input from frontline staff and citizens, using data-driven insights to identify areas for further optimization and prioritize future enhancements. Training and support are provided to LGU staff to ensure smooth adoption of the new queuing system and foster a culture of continuous learning and improvement.

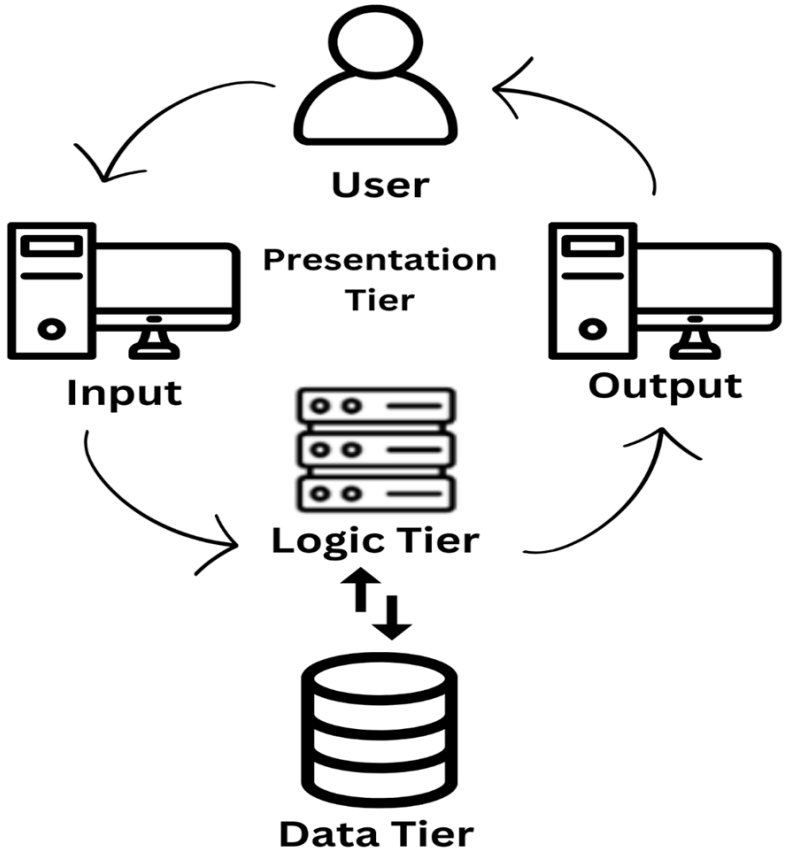
By embracing Agile Methodologies, the LGU Alaminos City can iteratively enhance its queuing system, delivering tangible benefits in customer satisfaction and service delivery efficiency while adapting to evolving needs and expectations.

## RESULT AND DISCUSSION

The implementation of the optimized queuing system in LGU Alaminos City has yielded significant improvements in customer satisfaction and service efficiency. Through a combination of digital solutions, user-centered design and Agile methodology, the queuing system has been transformed to better meet the needs of citizens and enhance overall service delivery.

Ensuring a clear understanding and guide to the project, the proponents utilized the project framework using the three-tier framework model. A three-tier framework is a client-server architecture in which the functional process logic, data access, computer data storage, and user interface are developed and maintained as independent modules on separate platforms [10].

Figure 2. Three-Tier Framework Model




One of the key results of the optimization effort is the reduction in wait times for citizens accessing government services. Real-time tracking and predictive analytics have allowed for more efficient allocation of resources, minimizing idle time and ensuring that citizens spend less time waiting in queues. This has led to a notable improvement in customer satisfaction scores, with citizens reporting higher levels of satisfaction with the queuing experience.

The introduction of a user-friendly interface guides the user through the different steps involved in specifying and emulating PPA systems using program-driven simulation [11]. Citizens now have access to convenient features such as remote queuing, appointment scheduling, and notifications about queue status updates. These features have not only improved the overall experience for citizens but also increased their perception of government responsiveness and accessibility.

Moreover, the Agile methodology adopted during the implementation has enabled continuous improvement and adaptation to change needs. By breaking down the project into manageable sprints and iterating based on user feedback, the queuing system has evolved to better align with citizen expectations. This iterative approach has also facilitated quick resolution of issues and rapid deployment of enhancements, leading to a more dynamic and responsive queuing system.

The success of the optimized queuing system can be further attributed to strong stakeholder engagement and collaboration. LGU officials, frontline staff, and citizens were actively involved throughout the process, providing valuable insights and feedback that informed decision-making and prioritization of features. Feedback from end users of software applications is a valuable resource in understanding what users request, what they value, and what they dislike [12].

As a result, enhancing the queuing system in LGU Alaminos City has demonstrated tangible improvements in customer satisfaction, service efficiency, and government responsiveness. By leveraging digital solutions, user-centered design principles, and Agile methodologies, the LGU has set a new standard for public service delivery, enhancing the overall experience for citizens and strengthening trust in government institutions.

# CONCLUSION

The optimization of the queuing system for the Local Government Unit (LGU) of Alaminos City has proven to be a resounding success in enhancing customer satisfaction and revolutionizing service delivery. Through the integration of digital solutions, user-friendly interfaces, and Agile methodologies, the LGU has achieved significant improvements in efficiency, accessibility, and responsiveness.

The implementation of real-time tracking, predictive analytics, and user-friendly mobile applications has resulted in a substantial reduction in wait times for citizens accessing government services. This has not only improved the overall experience for citizens but has also increased their perception of government effectiveness and accessibility.

Furthermore, the adoption of Agile methodologies has enabled continuous improvement and adaptation to changing needs and expectations. The iterative approach to development, coupled with strong stakeholder engagement, has facilitated quick resolution of issues, rapid deployment of enhancements, and a more dynamic and responsive queuing system.

The success of the optimized queuing system in LGU Alaminos City serves as a testament to the power of innovation, collaboration, and transforming public service delivery. By prioritizing customer satisfaction and leveraging modern technologies, the LGU has set a new standard for efficiency and effectiveness in local government services.

Moving forward, the LGU needs to maintain a focus on continuous improvement, monitoring key performance indicators, gathering feedback from stakeholders, and staying attuned to evolving citizen needs. By doing so, the LGU can build upon the success of the queuing system optimization initiative and continue to deliver exceptional services that meet the expectations of its citizens.

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