OPTI

complexity made simple

How OPTI developed a global mobile micro payments platform for gaming

CASE STUDY

Industry: Gaming
Client: PlayWing, France
Year: 2016-2024

PlayWing, a gaming company based in France, required a robust solution to manage mobile micro payments on a global scale.

The company's goal was to scale its operations to accommodate a large user base that would make regular, small payments.

OPTI was tasked with developing a platform that could unify diverse payment systems across hundreds of countries and mobile carriers.

CHALLENGES

The project presented several significant challenges, both technical and human.

- Each mobile carrier and country had its own API with varying characteristics.
- Users across different games in the portfolio needed a single payment journey.
- The platform needed to handle billions of microtransactions efficiently.
- The system had to be reliable with full traceability, including refunds.

FIRST STEP:

UNIFYING HUNDREDS OF APIs

The first step in delivering a solution was the standardization of interacting with hundreds of outside systems (mainly mobile carriers):

- ➔ Support for **HTTP and non-HTTP** APIs.
- ➔ Multiple **authentication** methods and **encodings**.
- ➔ Multiple interaction patterns: send a **request-read** response, send a **request-download** response, send a **request-wait-receive** response.

OPTI performed **high-level standardization:**

- ➔ modeling **users** (the millions of end clients).
- ➔ modeling **procedures** (actions performed by or for a user, such as a payment, balance-check or refund).
- ➔ modeling **intermediary concepts** for the transition from the high-level entities to the low-level APIs.

The standardization used **UML and structured SQL databases**.

HTTP APIs

SQL structured data

Code patterns

JSON data format

SSL and oAuth

User management

SECOND STEP:

UNIFYING USER JOURNEYS AND FLOWS

The payment platform's purpose was to **increase conversions by monitoring the sales journey**. The team took into account:

- ➔ **Regulatory** differences (country laws).
- ➔ Payment-**schedule** differences: one-time charging, daily charging, weekly charging etc.
- ➔ **Balance** checking.
- ➔ Product **granularity**: The bought product in one of its thousand variants will be delivered after payment.

Some highlights:

Regulatory constraints

SMS payments

Repeat payments

Electronic product delivery

Common programming standards

Separation of concerns

THIRD STEP:
DELIVER SPEED AND SCALABILITY

The payment platform had to deal with hundreds of millions to billions of users and payments. Our top priorities were:

- ➔ Payment speed
- ➔ Payment regularity
- ➔ Distributed nature and horizontal scaling
- ➔ Logical oorganization of technical resources

OPTI measured and computed the impact of each module on the overall efficiency, choosing time-tested technologies. A scheduling engine was developed from scratch.

Fast REST API

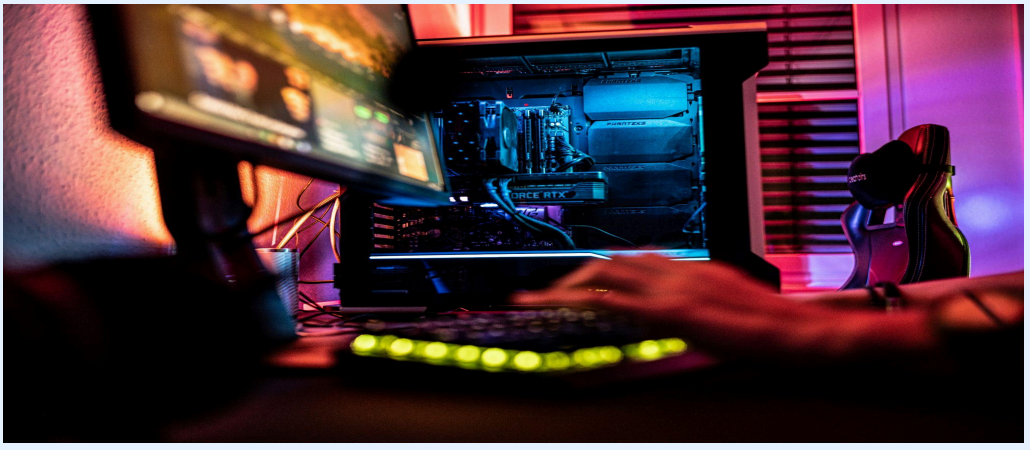
Horizontal scaling

Multithreading

Scheduling engine

Separation of concerns

Data Driven design



FOURTH STEP:
RELIABILITY AND TRACEABILITY

Payment systems require reliability and traceability features:

- ➔ Payment history
- ➔ Atomicity and reversibility
- ➔ Ease of inspection and log access
- ➔ Documentation and ease of modification.

OPTI designed a distinct **noSQL data store** to record the entire client-interaction history with all **API interactions** also logged.

The project documentation includes the **programming standards, the programming structure and the API documentation.**

Payment history

NoSQL data store

API manual

Full logging

Code documentation

Coding standards

RESULTS

The system designed by OPTI remains live as of 2024, managing billions of micropayments with significant outcomes:

Real-time analytics

The systems is integrated with a powerful analytics platform allowing real-time inspection and reaction.

Millions of subscribers

Users are subscribed and charged at regular intervals using mobile and SMS payments.

Quality assurance

The system performs reliable balance checking, partial payments, payment retry, payment deferral, refund.

Local and timezone optimization

The system is optimized for country, operator and time zone efficiency, charging users in best intervals.

Cloud infrastructure

The system runs in the cloud on scalable infrastructure, allowing cost control and easy scaling.

Billions of SMS and mobile payments

The system supports loads of more than one hundred million micropayments per day.

TECHNOLOGIES

Python, Javascript, PHP, MySQL, Elasticsearch, AWS, memcache, SOAP, JSON REST APIs.

TESTIMONIAL

"OPTI is a key partner which allowed us to go to market fast at a moment when our teams were in their infancy. Following attributes describe our collaboration with them: result-oriented, fast, proactive, excellent work ethics."

PlayWing

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OPTI

PRODUCT DEVELOPMENT, AUTOMATION AND DATA MIGRATION

Software company developing products and cutting costs by automations and data migrations. Founded in 2005, with extensive expertize in retail, medical, publishing, and gaming industries.

The OPTI team includes senior analysts and programmers, is ISO 9001 and ISO 27001 certified, HubSpot Solution Partner, Google Cloud Partner and certified in other technological stacks.

CERTIFICATIONS

HubSpot Partner · Google Workspace Administrator · ISO 9001 · ISO 27001 · Google Cloud Partner · Microsoft Certification CRM · Microsoft Certification ERP · Cisco CCNP · Cisco CCNA · Reviewed on Clutch 5/5 Rating

KNOW-HOW