Next-Level E-commerce: Building Payment Gateways, Data Security, and Multilingual Capabilities

Kesko Senkai Digital, the biggest E-commerce platform in the Baltics. Customers will find there over 60,000 items such as RTV and AGD equipment, home appliances and furnishings, garden accessories, and everyday items.

INDUSTRY
E-commerce

HEADQUARTERS
Vilnius, Latvia

TECH STACK
Ruby on Rails
Docker

Project Description

The project included the following parts:

The Database Anonymization project was undertaken to safeguard sensitive information in databases. The goal was to protect individuals' privacy and ensure that the original data remains indecipherable, especially in light of increasing regulations such as GDPR and the looming threats of de-anonymization.

The Multibranch Staging Environment initiative aimed to streamline software development by providing dedicated staging environments for different branches of a codebase. This setup enabled developers to test and validate various features or updates in isolation, promoting a robust and consistent development process while boosting team collaboration.

With the Citadele Payments: MultiLink Tool, the primary objective was to furnish a seamless and secure payment platform. Catering specifically to Citadele clients and major Baltic banks, this tool was developed to expedite transactions between businesses and their customers, emphasizing speed, efficiency, and a consolidated payment experience.

The project focusing on **Inbank Payment Integration** for E-commerce platforms in Latvia and Estonia was driven by the need to introduce a trusted, local payment method for online transactions. By seamlessly integrating Inbank's secure payment confirmation portal, the intent was to instill trust among consumers and enhance the overall online shopping experience, thereby potentially elevating sales for merchants in the region.

Lastly, the development of the **Multilingual E-commerce Platform** was centered around breaking language barriers in the online shopping sphere. The platform's purpose was to cater to a global audience by offering content in multiple languages, not just translating but also localizing content to resonate with diverse cultural nuances. This project aimed to expand market reach and provide an inclusive and globally relevant shopping experience.

In essence, each of these projects was steered by the motive to **enhance user experience**, promote efficiency, and address specific challenges in their respective domains

Challenges

For the **Database Anonymization project**, the foremost challenge was crafting algorithms that could effectively anonymize data without compromising its integrity. Ensuring that the anonymization was irreversible while maintaining the functional relevance of the data was technically demanding.

The **Multibranch Staging Environment** posed challenges in terms of **automation and infrastructure**. Setting up individual environments for each branch, ensuring synchronization with the main codebase, and automating this for every new branch required intricate scripting and resource management.

Integrating the Citadele Payments: MultiLink Tool meant interfacing with multiple banking systems. Ensuring seamless, real-time communication between these systems, while handling potential discrepancies and maintaining high-level security, was a significant technical challenge.

The Inbank Payment Integration for E-commerce platforms involved crafting a secure and seamless handshake between the platforms and the bank's systems. Handling financial data necessitated rigorous encryption and security protocols, while ensuring a smooth user experience.

Finally, developing the Multilingual E-commerce Platform wasn't just a translation task. It involved building a robust backend that could support dynamic content loading in multiple languages and ensuring that the site's performance remained optimal irrespective of the language or region, all while maintaining consistent UI/UX design.

Approach & Results

For the Database Anonymization project, we delved deep into the data structure. We crafted algorithms to **pseudonymize personal data** while ensuring the integrity of the data was preserved. Our primary challenge was striking a balance between data usability and ensuring privacy.

In the Multibranch Staging Environment endeavor, we employed Infrastructure as Code (IaC) tools. This allowed us to dynamically provision isolated staging environments for each branch, ensuring **optimal resource utilization** and **isolated testing**.

When working on the Citadele Payments: MultiLink Tool project, our primary focus was a secure API integration with the Citadele payment gateway. We concentrated on enabling a fluid transaction flow, delivering immediate payment status updates, and offering a unified solution for seamless connections with different banks.

For the **Inbank Payment Integration**, we facilitated a secure bond between the E-commerce platform and Inbank's payment gateway. It was imperative for us to guarantee that transactions were both seamless and secure. We especially paid attention to currency compatibility, catering to the local financial ecosystems of Latvia and Estonia.

Finally, in the Multilingual E-commerce Platform project, we incorporated a robust content management system that supported various languages. We went beyond mere translations; we embedded localization tools to adapt content to distinct regional nuances and traditions.

We've implemented enhanced **data protection** through our **database anonymization**, ensuring that we meet global privacy standards. This dedication enhances the trust placed in our solutions. We've also developed a multibranch staging environment that streamlines our testing processes.

This innovation significantly **reduces the risk of bugs** in the production environment, safeguarding the quality of our outputs. By integrating Citadele Payments' MultiLink Tool & Inbank Payment, we've elevated the transaction experience, offering both seamless and secure operations. This not only boosts customer trust but also opens avenues for increased sales. Venturing into the global market, we've established a multilingual E-commerce platform, enabling us to cater to a wide audience. This approach increases user engagement and sales by providing a culturally tailored shopping experience. Overall, our commitment is evident in the reliability, security, user-friendliness, and scalability of our solutions.

Client's Opinion

I must admit that The Codest has been providing us with a qualified backend engineers team who did their job without any complaints. They have worked on launching a new platform on top of an existing E-commerce platform.

GIEDRIUS RIMKUS
Engineering Manager at Kesko Senukai Digital