

Ethan Aquino, Arianna Chan, Paul Kim, Harmonie Lin, Luis Quintos

Business Integration: Features Supporting the CustomKeeps Business Model

CustomKeeps is a localized Print-On-Demand e-commerce platform designed for customers in the Philippines who want personalized merchandise without traditional bulk requirements. Our business model prioritizes affordability, accessibility, and unique customization for students, young adults, hobbyists, and small organizations who typically only need one to five items at a time. Revenue is earned on a per-item basis, with margins incorporated into both product pricing and delivery fees. By supporting low-commitment orders and small-batch fulfillment, CustomKeeps captures a market segment that traditional printing suppliers, who require high minimum order quantities, are unable to serve.

To make this business model functional and scalable, the platform must effectively enable customer personalization, ensure transparent and budget-friendly pricing, process orders accurately for real fulfillment, and maintain customer confidence through visibility in production and delivery. Each implemented feature contributes directly to these objectives and strengthens how the business captures and delivers value.

On our backend, (node.js + PostgreSQL) manages each transaction through normalized relational tables such as user, products, customization, orders, order items, and payments. This ensures that every process in the business is enforced and traceable. Each of these features connects directly to the data model and API routes that ensures that the platform's functionality can directly sustain CustomKeeps' value chain.

Product Customization Upload

The Product Customization Upload feature allows customers to upload their own artwork before adding items to the cart. Each design is securely linked to a specific item and eventual order, ensuring instructions are transmitted accurately to production. This feature drives revenue by enabling premium pricing for personalized products and encourages multiple-item purchases per order. It also differentiates CustomKeeps from competitors by making single-item orders viable, capturing niche and one-off projects that larger suppliers cannot serve.

In the code, the Product Customization Upload feature is implemented through the `/api/customizations` endpoint, where users can upload artwork or input text to personalize their selected items.

When a customer customizes a product, the frontend sends data such as `product_id`, `text_content`, and image file URLs to the backend. The backend stores these values in the `Customizations` and `CustomizationAssets` tables, linked to the `OrderItems` table via foreign keys. This relationship ensures each uploaded design is attached to the correct item, even after checkout.

Tiered Shipping Fee System

Affordability is another key aspect of the business model, supported by the Tiered Shipping Fee System. While the platform is designed to assign lower delivery fees for Metro Manila and slightly higher rates for provincial areas, actual courier pricing may sometimes result in lower fees for locations like Cebu. Shipping charges are clearly shown in the cart and stored in the order record to ensure full pricing transparency. This system helps reduce cart abandonment, build customer trust, and maintain profitability by realistically reflecting logistics costs.

Our Tiered Shipping Fee System is handled by the `/api/order/summary` endpoint, which calculates the `shipping_fee` dynamically based on the user's region stored in the `ShippingAddresses` table.

End-to-End Checkout With Payment Capture

The End-to-End Checkout and Payment Simulation are managed through the `/api/orders` and `/api/payments` endpoints. When a customer completes checkout, the frontend sends the order details, including selected products, customization IDs, quantities, shipping address, and computed totals, to the backend. The backend then creates a new record in the `Orders` table and corresponding entries in the `OrderItems` table, while linking any customizations to ensure traceability. Simultaneously, a payment record is created in the `Payments` table, capturing the total amount and simulating transaction success. Once the

payment is confirmed, the system updates the order status from “pending” to “paid,” reflecting both in the database and via the API response to the user.

It records each confirmed order in the database once a customer completes checkout and payment simulation. This ensures that revenue is reliably captured and lays the groundwork for integrating real digital payment systems such as GCash, Maya, or PayPal, which is critical for scaling in the Philippine e-commerce ecosystem. By supporting seamless payment processing, the platform reduces transaction failures and increases order completion rates.

Order Tracking Page

Lastly, the **Order Tracking Page** enhances transparency and customer satisfaction by allowing users to review their order details and monitor fulfillment status. Because customized production requires processing time, providing visibility into the order’s progress reduces customer concerns, improves trust in the brand, and increases the likelihood of repeat purchases. Additionally, this transparency reduces operational strain by limiting the need for customer support inquiries regarding order status.

Together, these features form a system that aligns CustomKeeps’ technical build with its business model. The customization upload feature captures core value and drives revenue, tiered shipping increases conversions and market reach, the checkout system ensures reliable revenue capture, and order tracking strengthens trust and retention. By directly linking platform functionality to revenue, customer behavior, and growth potential, CustomKeeps is positioned to provide easy, affordable, and personalized merchandise while sustaining long-term business growth in the Philippine market.