

Workshop-1

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Abstract

This document presents the conceptual and structural design of SportGear Online, an e-commerce platform specialized in sports equipment and apparel. The study integrates business and technical perspectives through the use of four key design tools: the Business Model Canvas, which defines the strategic foundations of the platform; User Stories, which translate business objectives into user-centered functionalities; User Story Mapping, which organizes these stories into a cohesive user journey; and CRC Cards (Class-Responsibility-Collaboration), which model the system's internal architecture from an object-oriented perspective. Together, these components provide a comprehensive framework that connects strategic vision with software implementation, ensuring an efficient, scalable, and user-driven digital solution.

1 Business Model Canvas

This Business Model Canvas outlines the strategic logic of "SportGear Online," a digital marketplace specializing in sports equipment and apparel.

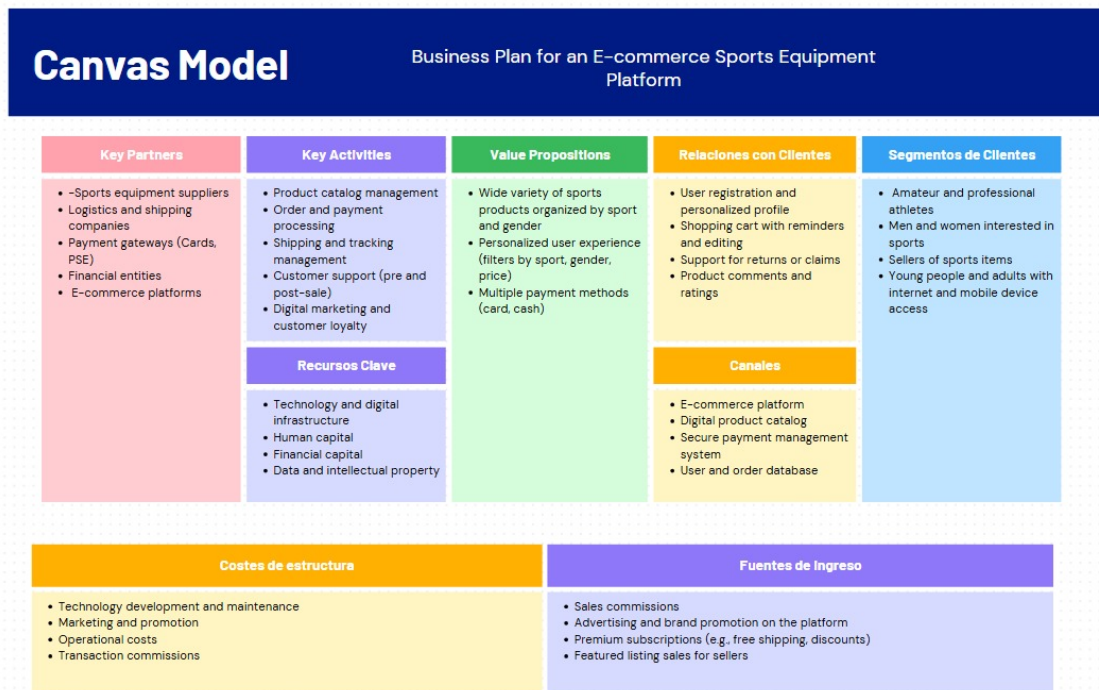


Figure 1: Business Model Canvas image.

2 User Stories

User stories are a fundamental tool in agile development that translate high-level business model components into specific, actionable software features. For an e-commerce platform, they ensure that every developed functionality directly contributes to strategic goals.

Each user story follows a simple template: "As a [type of user], I want to [perform an action], so that I can [achieve a business/value goal]." This format creates a direct line from the customer's need (from the Customer Segments and Value Propositions blocks of the Business Model Canvas) to a technical task.

Title: Advanced Product Search	Priority: High	Estimate: 8 Story Points
User Story: As a Customer, I want to search products by specific criteria (sport, price range, gender) so that I can easily find products that fits with that I want.		
Acceptance Criteria: Given I'm on the product catalog, when I use the search bar with keywords, then the system should show products matching name, brand or description. Given I want to minimize the results, when I apply filters by sport and price range, then only products related to all criteria should display. Given I have active filters, when I restore them, then the full catalog should be appear complete if have available inventory.		

Title: Electronic invoicing	Priority: High	Estimate: 13 Story Points
User Story: As a Finance Manager I want the system to automatically generate electronic invoices for each successful sale so that allows to comply with tax regulations and keeping correct the accounting of the bussiness		
Acceptance Criteria: Given a payment is successfully processed, when the system generates an invoice, then it must include all required legal fields and tax calculations. Given an invoice is created, when I access the finance module, then it should be available for reprints. Given an order is paid, when the invoice is not generated, then the system should prevent shipment processing.		

Title: Shipment notifications	Priority: Medium	Estimate: 5 Story Points
User Story: As a Logistics Operator I want to update shipment status information so that customers can follow their order delivery status.		
Acceptance Criteria: Given an order is ready for shipping, when I assign tracking number and carrier, then the system should update status to "shipped" and notify customer. Given a shipment is in transit, when I assing a transport, then the customer should see the information of the vehicle. Given a shipment is delivered, when I mark it as completed, then the system should update order status and trigger customer satisfaction survey.		

Title: Inventory Management in Real Time	Priority: High	Estimate: 5 Story Points
User Story: As a Store Admin, I want to update product stock quantities and receive low-stock alerts so that allows to have products available for the customers.		
Acceptance Criteria: Given I'm managing products, when I update stock quantities, then the system should immediately reflect new available units. Given a product get in low stock, when I view the product list, then it be highlighted for restocking. Given stock is updated to zero, when customers view that product, then It should show as out of stock.		

Title: User Account Management	Priority: Low	Estimate: 3 Story Points
User Story: As a System Admin I want to manage user accounts and roles so that system access is properly controlled and security policies are enforced.		
Acceptance Criteria: Given I need to create a user, when I complete the registration form with role selection, then he system should create the account with appropriate permissions. Given an existing user, when I modify their role, then the system should immediately update their access rights Given a user should be deactivated, when I disable their account, then he system should prevent login and preserve historical data.		

Figure 2: User Stories image.

3 User Story Mapping

While user stories define individual features, a User Story Map organizes them into a coherent narrative that visualizes the entire customer journey. It connects tactical development tasks to the strategic overview of the business model, ensuring that the team builds a holistic and valuable product, not just a collection of features.

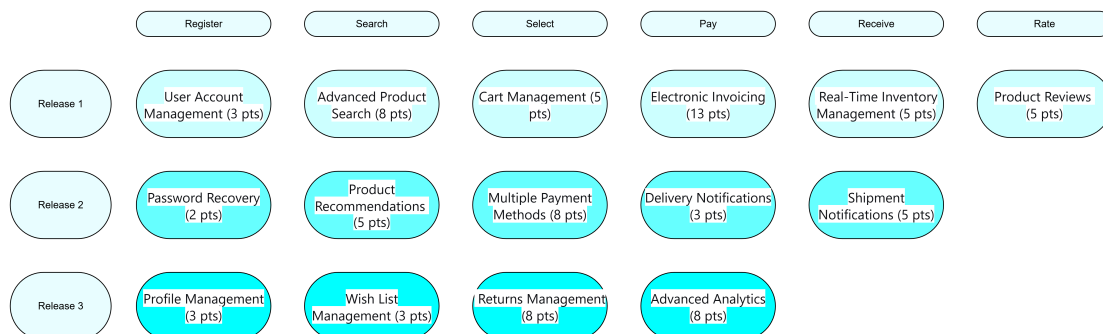


Figure 3: User Story Mapping image.

4 CRC Cards

CRC Cards (Class, Responsibilities, Collaborators) are a lightweight, object-oriented design tool used to model the system's architecture. They shift the focus from user-facing functionality to the internal "machinery" that makes the business model operate. For an e-commerce platform, they define how the key software components—the Key Resources—work together to execute Key Activities.

User		ProductCatalog		PaymentProcessor	
Responsibility	Collaboration	Responsibility	Collaboration	Responsibility	Collaboration
<ul style="list-style-type: none"> Register and manage personal profiles Browse and filter sports products by sport, gender and price Add, edit or remove products from the shopping cart 	<ul style="list-style-type: none"> ShoppingCart OrderManager ProductCatalog PaymentProcessor 	<ul style="list-style-type: none"> Manage the product database (add, update, remove, list items) Classify products by category, sport and gender Handle product search and personalized fits 	<ul style="list-style-type: none"> User Vendor OrderManager 	<ul style="list-style-type: none"> Handle online and offline payment methods Verify and process payment transactions Generate transaction receipts and manage refunds 	<ul style="list-style-type: none"> OrderManager User FinancialInstitution

OrderManager		Vendor		CustomerSupport	
Responsibility	Collaboration	Responsibility	Collaboration	Responsibility	Collaboration
<ul style="list-style-type: none"> Process purchase orders and manage order status Manage returns, claims and order history Coordinate with logistics partners 	<ul style="list-style-type: none"> User PaymentProcessor ShippingService ProductCatalog 	<ul style="list-style-type: none"> Register and manage product listings Monitor sales and transaction history Update product availability and prices 	<ul style="list-style-type: none"> ProductCatalog OrderManager User 	<ul style="list-style-type: none"> Manage complaints and return requests Provide technical assistance on the platform Handle pre- and post-sale inquiries 	<ul style="list-style-type: none"> User OrderManager Vendor

Figure 4: CRC Cards image.

References

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- [3] "A Guide to User Story Mapping: Templates and Examples (How to Map User Stories)," Planio. <https://plan.io/blog/user-story-mapping/>
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