

Case Studies & Guesstimates for E-Commerce Industries

The e-commerce industry has changed how people shop and do business, becoming essential to the global economy. It offers convenience, letting consumers shop anytime, anywhere, and connects businesses with a global audience. E-commerce reduces costs compared to physical stores and benefits from constant technological innovation.

Data scientists are key to e-commerce growth. They analyse customer behaviour to improve marketing and personalise shopping experiences. By using predictive analytics, they optimise inventory, develop pricing strategies, detect fraud, and track market trends. Their work helps e-commerce platforms improve services, streamline operations, and stay competitive.

1. Platform Selection



Popularity: Furlenco has emerged as a leading name in the furniture rental industry, capitalizing on the growing demand for flexible living solutions. Offering a wide range of stylish and functional furniture on rent, Furlenco provides convenience and cost-effectiveness to urban dwellers. With its subscription-based model, easy delivery, and hassle-free maintenance services, Furlenco appeals to millennials and young professionals who prioritize flexibility and quality. Its focus on customer satisfaction, along with a seamless online experience, has made it a popular choice among those seeking affordable and adaptable home furnishing solutions.

Impact: Furlenco has transformed the furniture rental market by offering affordable and flexible rental plans, allowing customers to avoid large upfront costs. Its seamless process, high-quality furniture, and timely deliveries have reshaped the way people furnish homes. By providing flexible rental options, Furlenco has attracted urban residents and set new standards for convenience. Its success has influenced other brands to explore rental models, enhancing the overall furniture rental experience in the market.

Relevance: In today's dynamic urban lifestyle, Furlenco's furniture rental service has become highly relevant, offering an affordable and convenient solution for temporary and long-term furnishing needs. As mobility increases, many consumers prefer flexibility over ownership, making Furlenco's subscription model a perfect fit. Its seamless online platform, wide variety of furniture, and doorstep delivery options cater to young professionals and students. Furlenco's focus on quality, flexibility, and convenience places it at the forefront of the evolving rental market, meeting the demands of a modern, transient population.

2. Core Features and Functionalities

Core Features and Functionalities of Furlenco are

1. **Flexible Furniture Rental:** Provides a wide variety of furniture for rent, catering to both short-term and long-term needs.
2. **Wide Range of Options:** Offers an extensive selection of furniture, from sofas to bedroom sets, appealing to diverse customer preferences.
3. **Easy Online Platform:** Simplifies the furniture selection, booking, and payment process, ensuring a seamless user experience.
4. **Home Delivery and Installation:** Provides free doorstep delivery and hassle-free installation, ensuring convenience for customers.
5. **Subscription-Based Model:** Allows customers to rent furniture on a flexible subscription basis, offering budget-friendly options.
6. **Damage Protection:** Includes damage protection plans, ensuring peace of mind for customers during the rental period.
7. **Customizable Packages:** Offers customizable rental packages, allowing customers to choose furniture combinations according to their needs.
8. **Regular Upgrades:** Provides the option to upgrade furniture over time, keeping the home decor fresh and in line with customer preferences.
9. **Customer Support:** Offers dedicated customer support for queries and assistance, ensuring a smooth experience for renters.

Contribution to Success and User Engagement:

- **Convenience:** Flexible furniture rental options, doorstep delivery, and free installation meet modern consumer demands, making Furlenco a preferred choice for furniture rental.
- **Enhanced Experience:** The user-friendly platform, customizable rental packages, and easy subscription model offer a seamless experience, attracting more users.
- **Loyalty and Retention:** Damage protection plans, regular upgrades, and personalized furniture recommendations foster customer satisfaction, encouraging repeat business.
- **Operational Efficiency:** Streamlined delivery and installation processes, backed by a robust support system, ensure quality service and higher customer satisfaction.
- **Data-Driven Personalization:** Tailored recommendations based on user preferences and rental history drive engagement and increase conversion rates.

These features collectively contribute to Furlenco's success and strong user engagement in the competitive furniture rental market.

3. Real World Problems

Real-World Problems Addressed by Furlenco

1. **Convenience in Furniture Shopping:**
 - **Problem:** High upfront costs and the hassle of furniture purchases can make it difficult for people to furnish their homes quickly.
 - **Solution:** Furlenco offers flexible furniture rental options with easy delivery, installation, and maintenance, allowing users to furnish their homes without long-term commitment or hefty costs.
2. **Product Availability and Variety:**
 - **Problem:** Limited furniture choices and long lead times in local stores can lead to frustration.
 - **Solution:** Furlenco provides a wide range of furniture and home decor options, ensuring availability and quick delivery to meet diverse needs.
3. **Personalized Furniture Selection:**
 - **Problem:** Choosing the right furniture can be overwhelming due to lack of guidance or poor options.
 - **Solution:** Furlenco offers personalized recommendations based on user preferences, simplifying the selection process and enhancing customer satisfaction.
4. **Cost Savings:**
 - **Problem:** Purchasing furniture outright can strain budgets.
 - **Solution:** Furlenco's affordable rental plans and flexible subscription models make quality furniture accessible without a significant upfront investment.
5. **Order Transparency and Trust:**
 - **Problem:** Uncertainty regarding delivery schedules and quality can lead to customer dissatisfaction.
 - **Solution:** Furlenco provides real-time tracking and guarantees on product quality, fostering trust and enhancing the customer experience.

How Furlenco Addresses These Problems

- **Flexible Rental Plans and Fast Delivery:** Offers the convenience of renting furniture with flexible terms, while ensuring quick delivery and installation, addressing the need for affordable and hassle-free furniture solutions.
- **Wide Product Range and Reliable Inventory Management:** Provides a broad selection of furniture and home decor, backed by effective inventory management to ensure products are available and ready for delivery, catering to diverse customer needs.
- **Personalized Furniture Recommendations:** Uses data-driven insights to suggest personalized furniture options based on customer preferences, improving the shopping experience and making it easier for users to select the right pieces.
- **Affordable Rental Plans and Discounts:** Offers cost-effective rental options and regular promotions to make quality furniture accessible without significant upfront costs, while incentivizing repeat business.
- **Real-Time Delivery Tracking:** Keeps customers informed with real-time updates on their order status, providing transparency and ensuring a reliable service experience.

These features effectively address customer pain points, driving Furlenco's success and customer loyalty in the competitive furniture rental market.

Database Management and Schema Design

4.Schema Design:

The schema for Furlenco is designed as a renting and purchasing system that supports user management, product cataloging, subscriptions, payments, deliveries, and feedback. It ensures data normalization, consistency, and scalability while maintaining relational integrity between tables.

Key Entities and Attributes:

1.User Table

Column	Data Type	Description
user_id	INT	Unique identifier for each user
name	VARCHAR(100)	Name of the user
email	VARCHAR(255)	Email address of the user
phone_number	VARCHAR(15)	Phone number of the user
address	TEXT	Address of the user
subscription_status	VARCHAR 100	Status of the user's subscription
created_at	TIMESTAMP	Timestamp when the user is created
updated_at	TIMESTAMP	Timestamp when the user is updated

2.Product Table

Column	Data Type	Description
product_id	INT	Unique identifier for each product
name	VARCHAR(100)	Name of the product
category	VARCHAR(200)	Category of the product
description	TEXT	Description of the product
rental_price	DECIMAL(10,2)	Rental price of the product
purchase_price	DECIMAL(10,2)	Purchase price of the product
is_pre_loved	BOOLEAN	Whether the product is pre-loved (secondhand)
stock_quantity	INT	Quantity of the product available
rental_available	BOOLEAN	Whether the product is available for rent
purchase_available	BOOLEAN	Whether the product is available for purchase
created_at	TIMESTAMP	Timestamp when the product is created

updated_at	TIMESTAMP	Timestamp when the product is updated
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3.Subscription Table

Column	Data Type	Description
subscription_id	INT	Unique identifier for each subscription
user_id	INT	Reference to the user who made the subscription
product_id	INT	Reference to the product in the subscription
start_date	DATE	Start date of the subscription
end_date	DATE	End date of the subscription
status	VARCHAR 100	Status of the subscription
subscription_type	VARCHAR 50	Type of subscription (Rental or Purchase)
created_at	TIMESTAMP	Timestamp when the subscription was created
updated_at	TIMESTAMP	Timestamp when the subscription was updated

4.Payment Table

Column	Data Type	Description
payment_id	INT	Unique identifier for each payment
user_id	INT	Reference to the user who made the payment
subscription_id	INT	Reference to the subscription associated with the payment
product_id	INT	Reference to the product related to the payment
amount	DECIMAL(10, 2)	The amount of the payment
payment_date	DATETIME	Date and time when the payment was made
payment_mode	VARCHAR 100	Mode of payment (e.g., Credit Card, UPI, etc.)
transaction_type	VARCHAR 100	Type of transaction (Rental or Purchase)
created_at	TIMESTAMP	Timestamp when the payment was made

5.Delivery and Pickup Table

Column	Data Type	Description
delivery_id	INT	Unique identifier for each delivery
user_id	INT	Reference to the user receiving the delivery
product_id	INT	Reference to the product being delivered
subscription_id	INT	Reference to the subscription linked to the delivery
delivery_date	DATE	Date of delivery
pickup_date	DATE	Date of pickup (if applicable)
delivery_type	VARCHAR 100	Type of delivery (rental or purchase)
status	VARCHAR 100	Status of the delivery (Scheduled, Completed, etc.)
created_at	TIMESTAMP	Timestamp when the delivery was scheduled/created
updated_at	TIMESTAMP	Timestamp when the delivery was last updated

6. Feedback Table

Column	Data Type	Description
feedback_id	INT	Unique identifier for each feedback
user_id	INT	Reference to the user who provided the feedback
subscription_id	INT	Reference to the subscription being reviewed
feedback_text	TEXT	The feedback text provided by the user
rating	INT	Rating given by the user
support_request_status	VARCHAR 100	Status of the support request related to the feedback
created_at	TIMESTAMP	Timestamp when the feedback was given

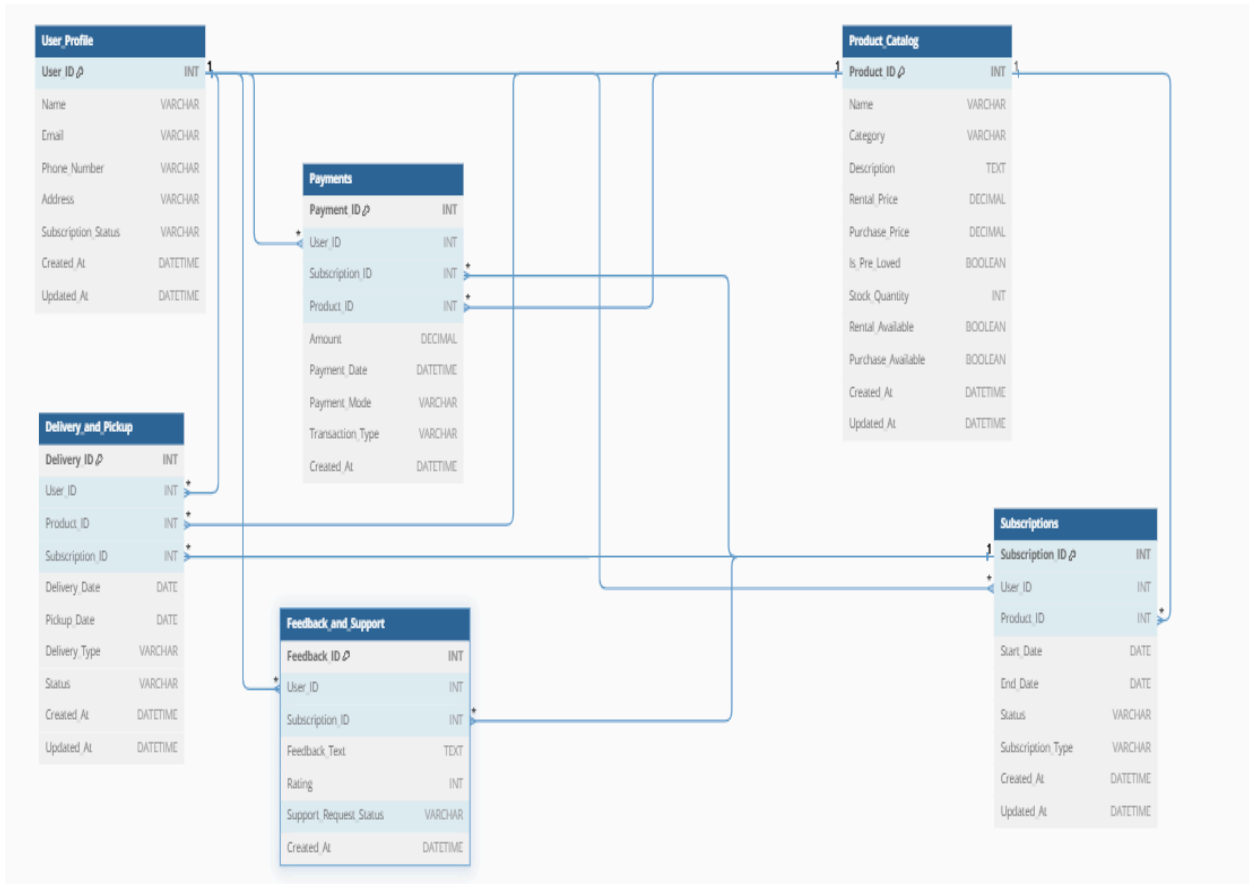
Relationships:

From Table	From Attribute	To Table	To Attribute	Relationship Type
User Profile	user_id	Subscriptions	user_id	One-to-Many
User Profile	user_id	Payments	user_id	One-to-Many
User Profile	user_id	Delivery and Pickup	user_id	One-to-Many
User Profile	user_id	Feedback and Support	user_id	One-to-Many
Product Catalog	product_id	Subscriptions	product_id	One-to-Many
Product Catalog	product_id	Delivery and Pickup	product_id	One-to-Many
Product Catalog	product_id	Feedback and Support	product_id	One-to-Many
Product Catalog	product_id	Payments	product_id	One-to-Many
Subscriptions	subscription_id	Payments	subscription_id	One-to-Many
Subscriptions	subscription_id	Delivery and Pickup	subscription_id	One-to-Many

Subscriptions	subscription_id	Feedback and Support	subscription_id	One-to-Many
Payments	payment_id	Delivery and Pickup	payment_id	One-to-One
Delivery and Pickup	delivery_id	Feedback and Support	delivery_id	One-to-Many

This schema design captures the essential data interactions and relationships within Furlenco, supporting its features and functionalities efficiently.

ER Diagram:



Case Study: Revenue and Profit Growth Strategies

Question: After completing the product dissection and schema design steps for the chosen platform, conduct a comprehensive case study on the above-chosen industry. Your goal is to identify and propose strategies to increase the **profit of the industry by at least 25%**.

I. Analysing Furlenco

Category	Details
Current Financial Data	Collect Financial Data
	Revenue: Gather data on all revenue streams, including sales from groceries, subscriptions, and any additional services.
	Expenses: Collect data on all operational costs, including supply chain costs, marketing expenses, technology investments, and employee salaries.
	Analyse Current Profit
	Profit Calculation: Calculate the current profit by subtracting total expenses from total revenue.
	Profit Trends: Analyse profit trends over the past few months or years to identify growth patterns or any potential declines.
Sources of Revenue	Identify Revenue Streams
	Furniture Rentals: Revenue from subscription-based furniture rental plans.
	Add-On Services: Income from value-added services like cleaning, damage protection, and relocation support.
	Sales of Furniture: Revenue from selling refurbished or surplus furniture.
	Partnerships: Income from collaborations with home décor brands or interior designers.
	Special Campaigns: Revenue from seasonal promotions, festive offers, and event-based packages.
	Analyze Revenue Contribution
	Segmentation: Break down the revenue to understand contributions from each stream.

	Top Products/Services: Identify the most popular rental categories and add-on services.
	Growth Trends: Study evolving customer preferences, like interest in sustainable or multi-functional furniture.
Sources of Expenses	Identify Major Expenses
	Inventory Costs: Sourcing, maintenance, and refurbishment of furniture.
	Logistics: Warehousing, delivery, and reverse logistics for returns.
	Marketing: Digital ads, offline campaigns, and collaborations.
	Technology: Platform upgrades, AI tools, and cybersecurity.
	Employee Salaries: Operations, support, and tech staff compensation.
	Insurance: Covering damages, theft, and customer incidents.
	Partnership Costs: Payments to real estate agents or promotional platforms.
	Analyze Expense Distribution
	Segmentation: Break down expenses by category (procurement, logistics, marketing) and region.
	Cost Efficiency: Optimize vendor contracts, reduce storage costs, and use AI for logistics
	Benchmarking: Compare expenses against industry standards to find inefficiencies.
	Scaling Benefits: Leverage economies of scale to lower per-unit costs as operations grow.
Customer Acquisition & Retention	Analyse Customer Acquisition Channels
	Channels: Identify sources like social media, referral programs, influencers, and online ad
	Effectiveness: Measure acquisition costs and conversion rates for each channel.
	Influencer Marketing: Utilize influencers to target new customers and boost brand visibility.
	Understand Customer Behaviour and Retention
	Customer Data: Analyze purchasing habits, feedback, and browsing patterns.

	Retention Rates: Track customer loyalty through repeat rentals and satisfaction
	Loyalty Programs: Introduce rewards for long-term rentals or referrals to increase retention.
	Churn Analysis: Investigate why customers stop subscribing and develop strategies to reduce churn, such as offering personalized incentives.

II. Focus Areas for Increasing Furlenco's Profit by 25%

Category	Focus Area	Measures
Internal Management ~ 5%	Operational Efficiency ~ 3%	Waste Management: Use data analytics to optimize inventory management, reduce waste, and improve procurement processes. Automate Processes: Invest in AI and machine learning tools to automate repetitive tasks like order processing, inventory updates, and customer support.
	Cost Control ~ 1.5%	Cost Control: Conduct regular audits of internal software and service agreements. Renegotiate terms with suppliers and seek cost-effective alternatives without compromising quality.
	Employee Productivity ~ 0.5%	Employee Productivity: Develop continuous training programs to improve efficiency, customer service, and logistics. Implement performance metrics and reward systems to motivate employees.
	Vendor Management ~ 1.5%	Build strong relationships with suppliers and renegotiate terms

Supply Chain Management ~ 4%		to secure better pricing and bulk discounts.
	Logistics Optimization ~ 1.5%	Improve delivery times, reduce transportation costs, and optimize routes using AI and predictive tools.
	Inventory Management ~ 1%	Use data analytics to manage stock levels, prevent stockouts, and avoid overstocking. Optimize warehouse layouts for better efficiency.
Product Strategy ~ 4%	Launch of New Products ~ 2%	Conduct market research to identify emerging trends and customer preferences. Introduce high-margin products such as premium furniture or flexible rental plans to capture new segments.
	Product Optimization ~ 2%	<p>Regularly review and phase out underperforming products. Focus on best-selling and high-margin items to optimize the product portfolio, and introduce bundle offers to increase average order value.</p> <p>Design Excellence: Emphasized aesthetics and functionality in their furniture designs.</p>
Market Expansion ~ 5%	Geographic Expansion ~ 2.5%	<p>1. Expand into new, high-potential regions. Focus on cities with growing demand for rental furniture and home essentials, both domestic and international.</p> <p>2. Collaborate with real estate developers, relocation services, and corporate offices to offer rental furniture as a service to their employees and customers, expanding reach.</p>
	Market Penetration ~ 2.5%	1. Deepen market share in existing regions by enhancing product offerings, improving delivery speed, and increasing

		<p>brand visibility to attract more customers.</p> <p>2. Tailor products and marketing strategies to the preferences and needs of specific regions, ensuring cultural relevance and addressing regional demands.</p>
Post-Sales Management ~ 3%	Customer Satisfaction ~ 1.5%	<p>1. Collect and analyze customer feedback to continuously improve products and services.</p> <p>2. Provide multi-channel support (chat, email, phone) with quick response times. Use AI-powered chatbots to address common queries efficiently.</p>
	Customer Retention ~ 1.5%	<p>1. Implement loyalty programs to reward frequent customers. Use personalized follow-up communications and promotions to encourage repeat purchases and enhance customer loyalty.</p> <p>2. Establish a robust feedback loop to gather insights after each interaction, using them to continuously refine the customer experience.</p>
Branding and Marketing ~ 4%	Digital Marketing ~ 2%	<p>SEO and SEM: Optimize website content for search engines and invest in paid advertising to drive more organic and paid traffic.</p> <p>Social Media Advertising: Increase ad spend on platforms like Instagram, Facebook, and YouTube to build brand awareness and drive conversions.</p> <p>Influencer Partnerships: Collaborate with influencers to create targeted campaigns that resonate with the target audience.</p>
		<p>Referral Programs: Encourage existing customers to refer new</p>

	Customer Engagement & Word of Mouth ~ 2%	ones by offering incentives. Customer Reviews & Testimonials: Actively encourage customers to leave positive reviews and testimonials on social media and review platforms to enhance brand credibility. Community Engagement : Participate in local events, sponsorships, and online communities to build a strong connection with customers and increase brand visibility.
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By focusing on areas like internal management, product strategy, market expansion, post-sales management, and branding, Furlenco can achieve a 25% increase in profitability. Each area should leverage data-driven insights to ensure the strategies are effective and aligned with consumer demands. Implementing these initiatives will not only drive growth but also strengthen Furlenco's competitive edge, enhancing both operational efficiency and customer experience.

III. Defining Strategies

Urban Expansion and Targeting	<p>Concentrate on major metropolitan areas with high rental demand and disposable incomes.</p> <p>Explore Tier-2 cities showing growth in urbanization and demand for rental services, thus broadening the customer base.</p>
Advanced Logistics and Warehousing	<p>Invest in smart warehouses equipped with inventory tracking systems to ensure optimal stock levels and reduce holding costs.</p> <p>Use AI-powered route optimization for faster deliveries, minimizing transportation challenges for bulky furniture.</p> <p>Partner with local logistics providers for last-mile delivery to improve service efficiency.</p>
Leveraging Technology for Customer Engagement	<p>Strengthen the app-driven subscription model by integrating personalized dashboards, predictive maintenance alerts, and easy upgrade options for customers.</p> <p>Use AI to recommend furniture upgrades or curated packages based on customer preferences and rental history.</p> <p>Incorporate AR/VR features to allow customers to visualize furniture in their spaces before renting.</p>
Revenue Enhancement Strategies	<p>Develop curated packages for specific needs (e.g., student housing, work-from-home setups, or minimalist apartments).</p> <p>Introduce premium services, such as on-demand cleaning, maintenance, and flexible rental upgrades.</p> <p>Launch seasonal campaigns offering discounts for long-term subscriptions or bundled furniture sets.</p> <p>Implement dynamic pricing, Offer time-sensitive discounts or surge pricing to adjust rental rates based on factors such as demand, location, seasonality, and customer preferences.</p>

Design Excellence and Sustainability	<p>Focus on modular furniture designs that are easy to transport, assemble, and maintain.</p> <p>Incorporate sustainable materials to appeal to eco-conscious customers while reducing costs over the furniture lifecycle.</p>
Digital Marketing and Data-Driven Operations	<p>Use digital platforms to reach target audiences with localized campaigns, leveraging social media and influencer collaborations.</p> <p>Apply data analytics to predict inventory demand, identify high-demand products, and reduce excess stock.</p> <p>Continuously analyze customer feedback to refine services and stay ahead of competitors.</p>
Customer Retention and Loyalty	<p>Implement loyalty programs rewarding customers with points redeemable for discounts, premium services, or free upgrades.</p> <p>Offer referral benefits to encourage customers to bring in new users.</p> <p>Regularly gather and act on customer feedback to improve both products and services.</p>

Through the proposed solutions leveraging an inside-out methodology, Furlenco can capitalize on its internal strengths such as robust logistics, technology integration, and innovative design to address key challenges and seize growth opportunities. The recommendations, including dynamic pricing, enhanced customer engagement, targeted urban expansion, and sustainability initiatives, provide a strategic roadmap to optimize operations, boost revenue, and retain customers effectively.

By implementing this comprehensive approach, Furlenco can confidently achieve its goal of a 25% profit increase, ensuring a competitive edge and long-term success in the rental furniture industry. This case study demonstrates how focusing on internal optimization and customer-centric innovation leads to measurable business outcomes.