



**VibeCraft**

---

**Home Interior Design App**

**Team Members**

Kaviya S

Dipayan Sarkar

Deepti Gupta

**July 2025**

## **Abstract**

The rapid advancement of Artificial Intelligence (AI) and Machine Learning (ML) has opened new frontiers in the field of interior design, enabling more personalized, efficient, and scalable design solutions. This project proposes a Machine Learning-powered Interior Design Application that assists users in visualizing and planning interior spaces based on their preferences, spatial dimensions, and functional needs.

The app leverages computer vision and generative design models to analyse user-uploaded images of rooms and generate realistic design renderings in various styles (e.g., modern, Scandinavian, minimalist). Natural Language Processing (NLP) allows users to describe their ideal design verbally or textually, which the system interprets to produce layout and decor suggestions. A recommendation engine, trained on a large dataset of design patterns and furniture catalogues, provides optimized furniture arrangements and product suggestions tailored to the user's space and budget.

Key features include real-time virtual staging, automatic colour and material matching, spatial layout optimization, and integration with e-commerce platforms for seamless purchasing. The system continually improves its recommendations by learning from user feedback and behaviour.

This intelligent design assistant democratizes interior design by making professional-quality insights accessible to non-experts, reducing time and cost while enhancing creativity and personalization in home and office design.

## **Problem Statement**

Traditional interior design processes often involve lengthy consultations, manual planning, and limited visualization, leading to delays and increased costs. Homeowners and designers face challenges in visualizing design concepts, managing resources efficiently, and ensuring that design choices align with personal preferences and spatial constraints. There is a need for an intelligent, user-friendly platform that leverages machine learning to automate design suggestions, provide real-time visualizations, and optimize the design process.

## **Business Need Assessment**

Current market gaps and needs include:

- **Lack of personalization in generic design platforms**

ML can address this by learning from individual user preferences, space constraints, and feedback.

- **High cost of professional interior design services**

An ML-based app democratizes access to design insights at a fraction of the cost.

- **Poor visualization before purchase**

AI-generated mockups improve buyer confidence, reducing regret and returns.

- **Fragmented user experience across tools**

The app consolidates design ideation, visualization, product selection, and purchase into one platform.

- **Limited scalability for design professionals**

Automation of routine tasks allows designers to focus on creativity and client relationships.

## **Market Overview**

The Indian interior design market is experiencing strong growth, fuelled by increasing urbanization, rising disposable incomes, and a greater demand for aesthetically pleasing living spaces. This growth is creating a significant market for interior design apps, both for consumers looking to visualize and plan their spaces and for professionals seeking tools to enhance their design process.

Interior design software plays a crucial role in supporting this growth by allowing designers, architects, and homeowners to visualize, experiment and plan spaces efficiently before making real-world changes. As cities become more densely populated, the need for space optimization and innovative layouts is further driving the demand for digital design tools.

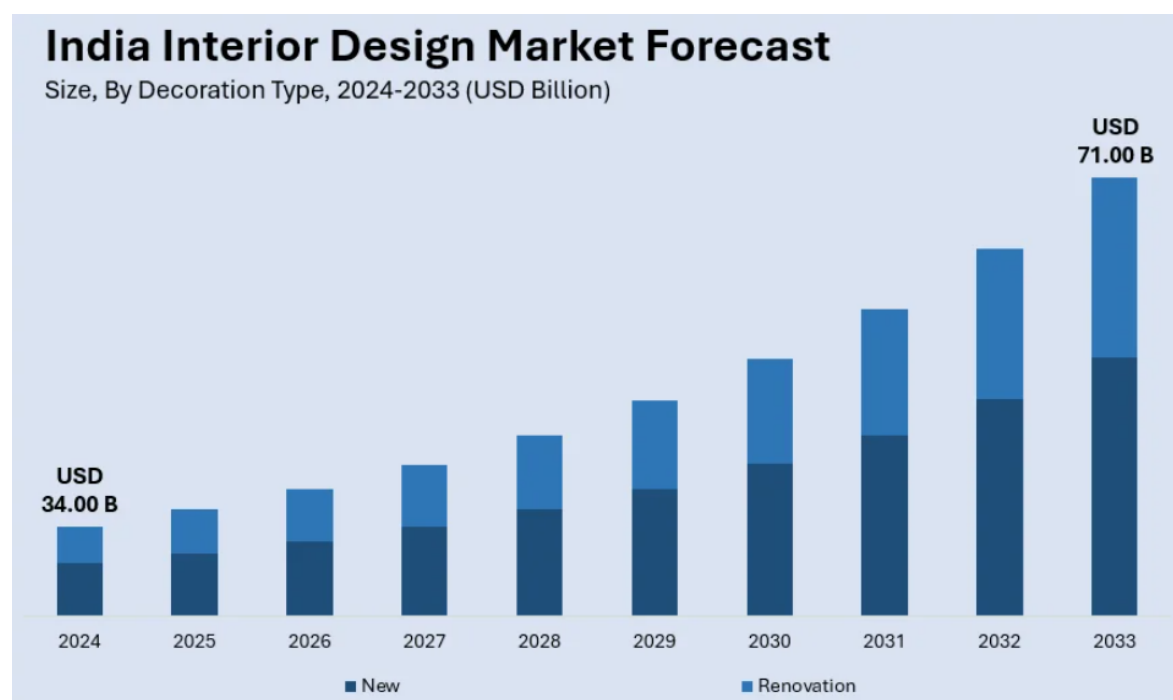
The real estate boom with more urban housing and commercial projects further supports the demand for interior design making it an essential part of property development. The expansion of the real estate sector, combined with an increasing demand for smart, sustainable designs and technological innovations, also contributes to market growth.

With a growing focus on personalized home aesthetics, smart home integrations, and sustainable design, homeowners and businesses are turning to interior design software to plan and execute their renovations. Additionally, the surge in home improvement projects has led to increased interest in **DIY design software** that enables individuals to create their layouts and styles with ease. Software solutions that offer **virtual staging**, **augmented reality (AR) visualization**, and **AI-powered design** suggestions are becoming increasingly popular among both professionals and homeowners.

In May 2025, Myntra collaborated with Google Cloud to launch Dream Room Inspirations. Dream Room Inspirations uses generative AI and Imagen 3 to help users in India visualize personalized interior design styles, enhancing the home décor shopping experience and supporting Myntra’s expansion into the category. It allows users to visualize their dream home decor by generating room images based on text prompts and chosen styles.

- **Market Size:**

The Indian interior design market was valued at USD 34.00 billion in 2024 and is projected to reach USD 71.00 billion by 2033, with a CAGR of 8.50% from 2025-2033, according to **IMARC Group**.



- **Growth Drivers:**

Key factors driving this growth include rapid urbanization, increasing population, rising disposable incomes, and government initiatives promoting real estate development.

- **Key Trends:**

Theme-based office and home interiors are becoming increasingly popular, with a rising demand for skilled interior designers.

### **Categories of Interior Design Apps:**

- **Consumer Apps:**

Many apps cater to consumers looking to visualize and plan their spaces, offering features like 2D and 3D design, augmented reality (AR) for furniture placement, and inspiration from real homes.

- **Professional Apps:**

Other apps are geared towards interior designers and architects, providing tools for 3D modelling, floor plan creation, and project management. Popular apps include Houzz, Homestyler, Magicplan, Live Home 3D, HomeByMe, Roomstyler, SketchUp, and Havenly.

- **Online Platforms:**

Major online platforms like Flipkart, Amazon, and Pepperfry have also introduced virtual design tools to help customers visualize furniture in their spaces.

### **Competitive Landscape**

The interior design market in India is witnessing significant growth as several key players have introduced cutting-edge innovations that embrace technology, sustainability, and personalization. **Augmented Reality (AR)** and **Virtual Reality (VR)** tools have revolutionized the design process, allowing clients to experience the redesigned spaces before implementation. Personalization remains a key focus, with interior designers leveraging data-driven insights to create bespoke interiors that reflect the unique preferences and lifestyles of clients. This amalgamation of technology, sustainability, and individualization underscores the India interior design market's dynamic evolution, as key players continue to shape spaces that seamlessly blend innovation and practicality.

### **Key Players:**

Several virtual interior design apps are popular in India, offering features like 3D room planning, furniture placement, and design inspiration.

**Livspace, RoomGPT, Urban Ladder, Homestyler, Design Cafe, Godrej Interio, Houzz, and HomeLane** are among the prominent players in the Indian interior design market.

### **India Interior Design Industry Segmentation:**

The market has been categorized based on decoration type, end user and region.

1. **Decoration Type:**

- New
- Renovation

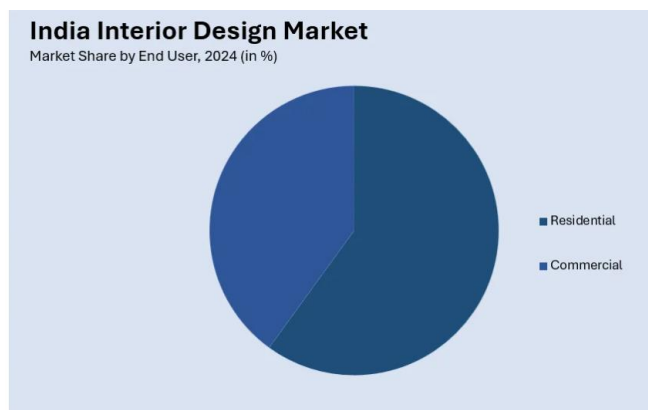
Based on the decoration type, the India interior design market has been segregated into new and renovation, where new currently holds the largest market share.

## 2. End User:

- Residential
- Commercial

Based on the end user, the India interior design market has been segregated into residential and commercial, where residential currently holds the largest market share.

However, the commercial sector also plays a crucial role in driving India interior design market, as workplaces transition from conventional to flexible and collaborative spaces, interior design responds with adaptable layouts, ergonomic furniture, and technology integration that enhance employee productivity and well-being.



## 3. Region

- North India
- West and Central India
- South India
- East India

**North India** holds the largest share of the interior design market, significantly influenced by urban development, cultural heritage, and economic growth in cities such as Delhi, Chandigarh, and Jaipur. The demand for innovative and space-efficient designs, along with a growing affluent consumer demographic, solidifies North India's dominant position in this market.

### Target Audience

#### *Individual Consumers*

##### 1. Urban homeowners & first-time buyers:

- Need: Affordable yet stylish interiors
- VibeCraft: Budget slider + AI layout = smart designs within ₹ limits

## **2. Renters & DIY enthusiasts (Gen-Z, Millennials):**

- Need: Try new looks, share online
- VibeCraft: Virtual staging + social-share tools

## **3. Busy professionals & WFH users:**

- Need: Compact, ergonomic spaces
- VibeCraft: Smart desk/chair filtering + optimized layouts

### ***Design Professionals***

#### **1. Interior designers / Architects / freelancers / Event Organizers:**

- Need: Fast visualization tools for client presentations with quick customization to retain customer interest.
- VibeCraft: Pro tools: 4K exports, automate space planning, client dashboards, enhanced collaboration with vendors and client

### ***Businesses (B2B)***

#### **• Property hosts & developers:**

- Need: Quick unit staging to enhance property listings
- VibeCraft: 3D renders, photo uploads, faster rental turnover

#### **• Furniture retailers**

- Leveraging **smart recommendations** for cross-selling and upselling.

#### **• E-commerce platforms**

- Need **visual fitment tools** to reduce product return rates.

### **App Concept Generation and Development**

The idea emerged from the need to simplify the interior design process, making it accessible to a broader audience. By integrating machine learning and augmented reality, the app aims to provide personalized design solutions that are both efficient and user-friendly.

The proposed interior design app will allow users to input room dimensions and preferences, generating 3D visualizations and design suggestions. The app will utilize machine learning algorithms to recommend furniture, colour schemes, and layouts based on user inputs and design trends.

### Competitive Advantage

Feature	Competitors	VibeCraft
Personalized AI + Feedback Loop	✗	✓
Voice + Text + Image Inputs	⚠	✓
Budget-aware Visualizer	✗	✓
Explainable Design Suggestions	✗	✓
Indian Layout & Vaastu Support	✗	✓
AR Visualization + Marketplace	⚠	✓
Local Service Booking	⚠	✓

The proposed app aims to integrate AI-driven design suggestions with augmented reality and real-time collaboration, offering a comprehensive solution compared to existing tools.

### Applicable Patents

- **US20130073420A1:** System and method for interior design utilizing machine learning to suggest design elements based on user preferences.
- **WO2021008566A1:** Artificial intelligence systems and methods for interior design, focusing on generating furnishing plans and visualizations using neural networks.

### Applicable Regulations

- **Data Privacy:** Compliance with GDPR for users in the EU and similar regulations in other regions to ensure user data protection.
- **Consumer Protection:** Adherence to local laws regarding digital product offerings, refunds, and user rights.
- **Environmental Standards:** Incorporation of sustainable design practices and materials in recommendations.

### Applicable Constraints

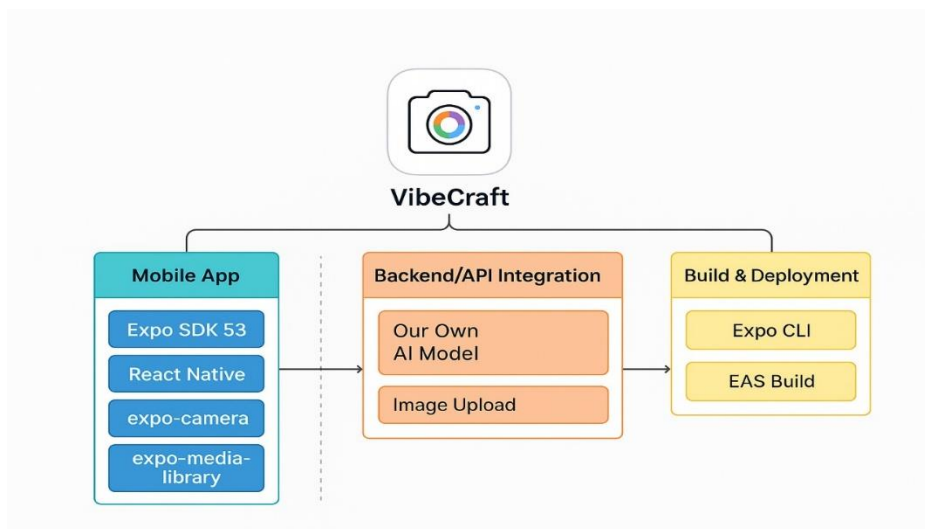
- **Space:** The app must function on mobile devices with varying screen sizes and processing capabilities.
- **Budget:** Development costs should be optimized, considering potential funding and revenue streams.
- **Expertise:** Requires a team with skills in machine learning, augmented reality, user experience design, and software development.



### **Final Product Prototype**

The final product is a mobile application powered by machine learning and augmented reality (AR) that provides personalized interior design solutions. Users scan their rooms with their smartphone camera, and the app processes spatial data to suggest design layouts, furniture arrangements, and colour palettes. Using machine learning models trained on thousands of design samples, the app generates tailored visualizations. Users can view these suggestions in real time via AR, and optionally purchase recommended furniture directly through the app.

### **Underlying Technologies**



## App Coding

---

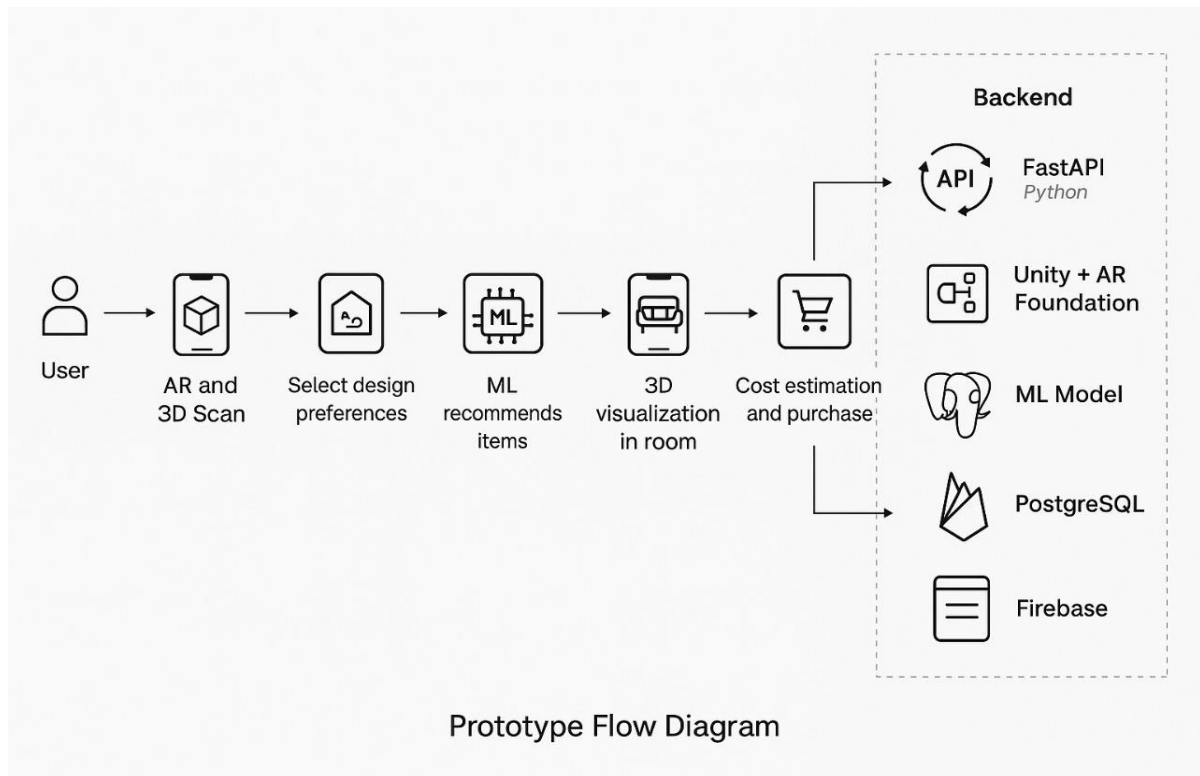
```
1  import React from 'react';
2  import { NavigationContainer } from '@react-navigation/native';
3  import { createNativeStackNavigator } from '@react-navigation/native-stack';
4  import HomeScreen from './screens/HomeScreen';
5  import SuggestionScreen from './screens/SuggestionScreen';
6
7  const Stack = createNativeStackNavigator();
8
9  export default function App() {
10   return (
11     <NavigationContainer>
12       <Stack.Navigator initialRouteName="Home">
13         <Stack.Screen name="Home" component={HomeScreen} />
14         <Stack.Screen name="Suggestions" component={SuggestionScreen} />
15       </Stack.Navigator>
16     </NavigationContainer>
17   );
18 }
```

---

## Built – In App Features

- **Key Features:** Room templates, Real-sized 3D furniture, AI decoration, Extensive library of furniture and home décor products
- **3D capabilities:** 3D floorplans from photos with high accuracy
- **AR Features:** Available
- **Customization:** Custom furniture design, flexible customization of colours, textures, and furniture styles
- **Map Integration:** The app offers a map search feature that allows users to easily find nearby featured service providers based on their location.
- **Fully Operational Store:** The app showcases cleaning, repairing and home decoration products on its in-built store.
- **Service Listings by Category:** Services are organized into collections to redirect users into certain categories. Service descriptions, rates, ratings, stock availability and store timings are mentioned as well.
- **Secure Payment Methods:** The app offers multiple secure payment options such as cash, credit cards, and debit cards, as well as Stripe and PayPal.
- **Third-Party APIs:** With the change in service and product providers, it is possible to integrate any third-party APIs into the app.
- **Chatbot for in-app services:** The app includes an AI-powered personal assistant chatbot which serves as a helpful guide to steer users towards the various features of the app.
- **In-App Messaging and Support from external service providers:** The app offers a built-in messenger for easier communication between service providers and users.

## Schematic Diagram



## How it works

### 1. Users scan their room or upload photos

Clients can choose between AR-based room scanning or uploading of existing photos of the rooms from their photo library.

### 2. Choose a room type or design theme:

Users can select from various room types (e.g., Bedroom, Living Room) or design themes (e.g., Bohemian, Minimalist) available on the category page.

### 3. Generate room inspirations:

The AI generates high-quality images of rooms based on the selected style and prompts.

### 4. Add furniture, décor, appliances, wall paint options

The AI suggests wide variety of options to furnish the room with different types of furniture, personalize it with home décor items, add lighting and other smart appliances, complete the process with choice of wall paint.

### 5. Explore and shop:

Customers can then browse through the generated images and find products that match their chosen decor directly within the app.

### Monetization Strategies of Leading Indian Interior Design Apps

App Name	Monetization Methods	Notes
<b>Livspace</b>	<ul style="list-style-type: none"><li>- Commission from projects</li><li>- Subscription for professionals</li><li>- Branded product sales</li></ul>	End-to-end interior execution; partners with designers and vendors
<b>HomeLane</b>	<ul style="list-style-type: none"><li>- Flat design + execution fees</li><li>- Consultation fees (sometimes free)</li><li>- Vendor commissions</li></ul>	Works on a studio model; controlled operations
<b>Urban Company (Interior)</b>	<ul style="list-style-type: none"><li>- Commission from designers</li><li>- Premium service fees</li></ul>	Platform-first model, diversified services
<b>Houzz India</b>	<ul style="list-style-type: none"><li>- Ads</li><li>- Premium listings for professionals</li><li>- Affiliate product links</li></ul>	Community and inspiration focused
<b>MagicBricks Interiors</b>	<ul style="list-style-type: none"><li>- Lead generation fees</li><li>- Subscription for professionals</li></ul>	Extension of a real estate app
<b>Flipspaces</b>	<ul style="list-style-type: none"><li>- SaaS for commercial design (Visualisation + Execution)</li><li>- Revenue from furnishing sales</li></ul>	B2B-heavy; data-driven execution

## Insights from the Market

### ***What Works Well:***

- **Commission-based revenue:** Livspace and HomeLane earn a % of every interior project — proven and scalable.
- **B2B2C strategy:** Onboarding designers and contractors (supply-side) helps drive B2C monetization.
- **Visualization tools:** Many apps charge for 3D renders / AR views after freemium stage.
- **Marketplace model:** Connecting customers with designers, carpenters, or brands (like Houzz) brings recurring lead revenue.
- **Product affiliate revenue:** Some platforms earn by recommending and selling furniture or appliances.

### ***Gaps / Opportunities:***

- Many apps focused on Tier-1 metros, neglecting aspirational buyers in Tier-2/3 cities.
- Limited DIY + budget planning tools for price-sensitive users.
- Weak community features (e.g., user-generated designs or forums).

## Vibecraft Business Model

### ***Vibecraft Monetization Strategy and Core Revenue Streams***

#### **1. Freemium Visualization Tool**

- **Free:** 2D layouts, mood boards
- **Paid:** 3D renders, AR view of furniture, VR walkthroughs
- ₹50 for 1 week access, ₹100 for monthly subscription and ₹500 for yearly subscription.

#### **2. Designer Marketplace with Commission**

- Let users hire designers or contractors on-platform
- Charge **10–20%** commission per project or leads

#### **3. Pro Tools Subscription (B2B)**

- Monthly/Annual plans for interior designers (₹500/month)
  - Branded client dashboards
  - Auto-generated material & product lists
  - 4K photorealistic design exports and AR tools
  - Proposal generator

#### **4. Affiliate Revenue from Furniture & Decor**

- Partner with brands like Pepperfry, Urban Ladder, IKEA, local vendors
- Earn **5–10% affiliate revenue** on converted products

#### **5. Ad Space for Vendors**

- Charge **local tile, lighting, hardware vendors** to advertise in-app

#### **6. Lead Generation for Builders**

- Earn revenue by passing qualified leads to real estate or renovation contractors

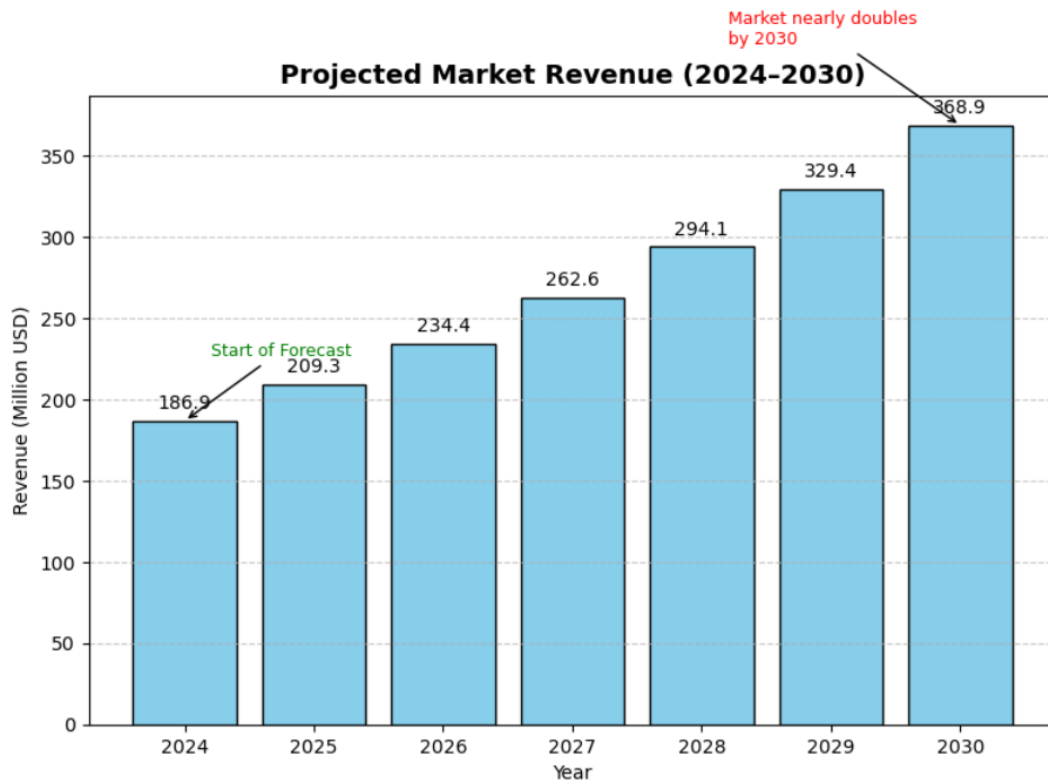
#### **Bonus: Launch Offer Ideas**

- First 5 renders free
- Free listing for 3 months for early designer sign-ups
- Cashback on purchases made through affiliate links

#### **Go-to-Market Differentiator**

- **“Design + Shop” Model:** View design, buy elements instantly.
- **Onboarding local freelancers** to support execution in smaller towns.
- **In-app community:** Share designs, upvote, get ideas (to add a fun vibe and get more next-gen users).

## Indian Interior Design Software Market Forecast



Year	Market Revenue (in million USD)
2024	186.9
2025	209.3
2026	234.4
2027	262.6
2028	294.1
2029	329.4
2030	368.9

### Highlights (India Interior Design Software Market Size & Outlook, 2024-2030)

- The India interior design software market generated a revenue of USD 186.9 million in 2024 and is expected to reach USD 368.6 million by 2030.
- The India market is expected to grow at a CAGR of **12%** from 2025 to 2030.

- In terms of segment, enterprise was the largest revenue generating application in 2024.
- Individual is the most lucrative application segment registering the fastest growth during the forecast period.

### **Financial Assumptions for Vibecraft Business Model**

#### **1. Product Pricing and Cost Assumptions:**

- Product Price: ₹100/month (individual user), ₹500/month (commercial user)
- Cost of Operation: ₹30,000/month

#### **2. Market Penetration:**

- Market size: Gross Production Value × Penetration Percentage
- For each year, we estimate minimum penetration at 0.05% and scaling up gradually

### **Computing Financial Equation with these figures**

**Monthly revenue equation:**  $y = (100x + 500j) - 30000$

Where,

$x$  is the total number of individual app subscriptions per month

$j$  is the total number of individual app subscriptions per month

The value of  $x$  and  $j$  depends on market penetration.

### **Revenue Projection: Year-wise Estimates**

Year	Market Revenue (in million USD)	Penetration %	Revenue (Million USD)	Revenue (INR)	Revenue less Annual cost (INR)	Subscriptions taken (Assuming 60% Ind and 40% Commercial)
2025	209.3	0.05%	0.10465	8895250	8655250	144454.2
2026	234.4	0.08%	0.18752	15939200	15699200	261853.3
2027	262.6	0.11%	0.28886	24553100	24313100	405418.3
2028	294.1	0.14%	0.41174	34997900	34757900	579498.3
2029	329.4	0.17%	0.55998	47598300	47358300	789505

### **Conclusion**

Market revenue nearly doubles from **USD 186.9M in 2024** to **USD 368.9M by 2030**—illustrating the impact of compounding. Vibecraft penetration is also expected to grow at a moderate pace. VibeCraft isn't just another AI tool—it's has been projected as the common man's design partner. It is built for Indian homes, not Western showrooms. It encourages



creativity with guidance. It is designed to feel fun, empowering, and easy—even for first-time users. It addresses the key challenges faced by both homeowners and professionals—time constraints, budget limits, and lack of visualization—through AI-powered recommendations and real-time simulations. With a scalable freemium model and strong tech infrastructure, the app is positioned to lead in the smart design tools market

**References:**

1. India Interior Design Market Size, Share, Trends and Forecast by Decoration Type, End User, and Region, 2025-2033
2. Interior Design Software Market Size, Share & Trends Analysis Report By Application (Individual, Enterprise), By Deployment (Cloud, On-premises), By End-use (Residential, Non-residential), By Region, And Segment Forecasts, 2025 - 2030

**Github Link of App**

<https://github.com/Dipayansrkr/VibeCraft>