

Re-Imagining Photoshop in Mobile: Market Analysis and Feature Proposal

Team-37

1 Market Scan

1.1 Market Size and Growth

The photo editing software market is valued at approximately **USD 2.37 billion in 2025** and is projected to reach **USD 3.29 billion by 2032**, while also maintaining a steady baseline Compound Annual Growth Rate of **4.8%** [1]. However, the sub-segment for AI-driven image editing is expanding even faster, with projections citing a CAGR of over **25% through 2032** [2]. This indicates a rapid change, with traditional photoshop tools being enhanced by AI models and made easier. The global creator economy is estimated at roughly **USD 253 billion in 2025** and might grow to over **USD 2 trillion by 2035**, with individual content creators accounting for a majority share [3]. As AI powered tools become more relevant, there is a growing demand for both mobile editing solutions for convenience and professional-grade software for high-quality content, underscoring the need for versatile editing options across all levels of creation.

1.2 User Segments & Drivers

- Casual Social Creators:** About **40-45%** of smartphone users actively use editing tools [4]. Driver: Speed and ease. They avoid complicated desktop apps and want one-tap edits that look good and are easily made.
- Influencers:** They need high quality content, sometimes on immediate basis and are willing to pay for tools that mix AI speed with manual control.
- SMBs & E-commerce Merchants:** **70%** of retail leaders plan to adopt AI by 2025 [14]. Driver: Cost and efficiency. Many use AI-powered tools to quickly edit product images and content, enabling them to compete with larger brands without the need for professional designers.

1.3 Manual vs. AI Automated Operations

The shift from manual to AI workflows is characterized by a move from pixel-level manipulation to semantic-level generation.

- Pixel vs. Semantic Editing:** Manual workflows (Photoshop Desktop) require users to manipulate pixels directly (cloning, healing, masking, etc). AI workflows (Photoroom, Magic Editor) operate on concepts and prompts (example inputs: remove person, replace sky). This reduces the skill barrier significantly [11].
- Efficiency Gains:** AI-driven editing tools can significantly streamline visual production workflows, especially for repetitive tasks such as background removal, object cleanup, and basic retouching. Industry reports and vendor analyses consistently show substantial time savings—often cutting routine editing work from minutes to seconds per image[5]. In fashion and product photography, AI model swapping, virtual try-on tools, and automated color or lighting adjustments can also reduce the need for full traditional shoots, leading to meaningful cost efficiencies[12].
- Batch Processing:** Manual editing scales directly with workload: every additional image adds more time. AI tools(Claid.ai, Photoroom), however, can process many images in batches, so

the total time doesn't increase as sharply as manual editing. This makes AI especially useful for large scale tasks like e-commerce catalogs [13].

2 Chosen Features

2.1 Style Consistent Text Replacement

Description: Replace scene text (signs, product labels, posters) with new text while preserving the original typography, texture, perspective, lighting, and surface material.

Why Chosen:

- Unique Implementation:** Current tools struggle to generate realistic text replacements that blend seamlessly with the scene, making this feature uniquely valuable. Most apps add another layer over the text making it look unrealistic. (see table 1)
- Limitless Fonts:** The replaced text need not be of any specific font. The exact style of the text is replicated even if it doesn't belong to any specific font group.
- Use Case:** *In a social media campaign, a brand needs to quickly update promotional text on a worn-out billboard without reshooting the entire scene. Our tool replaces the original text, perfectly matching the font, perspective, and texture, allowing the new message to look authentic and visually cohesive, saving time and production costs.*

2.2 Emotion-Based Color Grading

Description: Lets the user input an image and their desired emotion to be applied in the image. The image is then color graded to the user's desired emotion.

Why Chosen:

- Emotion first editing:** Lets the user directly apply their feelings instead of available filter names. Resonates more with the users than generic filters.
- Unique AI grading:** No major apps let users choose an emotion and gives an AI generated color graded output.(see table 1)
- Accessible Creativity:** Bridges the gap between professional colorists and casual users, making expressive editing easier
- Use Case:** *A user wants to convey a melancholic mood for a rainy cityscape photo but struggles with technical color grading. By selecting the emotion "melancholic," our AI grades the colors naturally to evoke the desired feeling,*

2.3 Object-Aware Relighting

Description: Combines inpainting and relighting into one flexible workflow. Users can choose to either inpaint first and then relight or relight first and then inpaint. With both tools available, the user has full creative control to edit, refine, and adjust lighting or content in any order.

Why Chosen:

- Seamless Object Removal:** AI inpainting ensures that filled areas match texture, perspective, and scene context, producing realistic results without inconsistent lighting or shadows, unlike current eraser tools.(see table 1).
- Fast and Efficient:** The combination of tools is applied very efficiently, leading to a faster combined output than most existing tools.

Table 1: Existing Feature Analysis
1) Text Replacement

Competitor	Operation	Manual vs. AI Breakdown	The Gap (Opportunity)
Image TextEdit (Web)	AI Automated	AI: Detecting text, then erases and then generates new text. Limit: Web-based only.	Struggles with multi-line, adjacent words and shadows. Limited to single text blocks .
Adobe Express	Manual Assist	Manual: "Grab Text" extracts text to a layer. User must then manually scroll through various fonts to find a match for it to be similar to the original style of the text.	Matching the font is manual guesswork. There cannot always be font similar to the text leading to a very visible edit.
Phonto	Fully Manual	Manual: User manually places a text box, picks a font, uses an eraser tool to hide the old text, and tries to match perspective.	Extremely slow. Limited to a few set of fonts and doesn't have any option to replace the text.

2) Emotion based Color Grading

Competitor	Operation	Manual vs. AI Breakdown	The Gap (Opportunity)
Lightroom Mobile	Fully Manual	Manual: User must understand color science. Users must slide through the 'temperature' option to achieve the color that best matches their emotion. To get "Sadness," they must manually desaturate Orange/Yellow channels.	High barrier to entry. Users can feel their emotion but may not achieve it via manual tuning.
VSCO	Automated (Static)	Automated: The user can choose from the preset of filters and the image is transformed according to the filter chosen.	Lacks semantic understanding. The preset may not represent the emotion needed properly.
Colorio / Runway	AI	AI: Text to Look-up Table(LUT). Then filter is applied based on the LUT.	Lacks precise emotional Look-Up Table mappings. Lacks scene specific semantic understanding.

3) Object Aware Relighting

Competitor	Operation	Manual vs. AI Breakdown	The Gap (Opportunity)
Google Magic Editor(AI Removal Only)	AI	AI: Excellent at removing objects (Generative Fill). Limit: If you remove a tree casting a shadow, the shadow often remains, or the lighting on the filled area looks "flat."	Solves removal but ignores the physics of the scene (lighting/shadows).
Google Portrait Lighting	Hybrid(AI Manual)	+ AI: Automatically detects faces and automatically applies synthetic light. Manual: User can manually reposition light source and change the intensity of the light.	Does not support relighting for full scenes or diverse objects(limited to portrait and faces). Does not handle object removal.
Clipdrop (Relight)	AI (2D to 3D)	AI: Generates normal maps to allow relighting. Limit: Often lowers image resolution and struggles with complex backgrounds.	Great tech, but lacks depth and Object Removal context.

- **Use Case:** In the crowded market, an obstruction is blocking the person or object you want to highlight. The obstruction can be removed by our tool, then natural light is applied to bring them into focus, allowing them to stand out against the softened background.

2.4 Dataset

- The dataset used for **synth id**: [FilmSet] : It contains 5285 high quality photographs of 4 different categories: Cinema, Class-Neg, Velvia and Input. Publicly available dataset.
- The dataset used for **lama inpainting**: [PIPE]: It contains around 9000 inpainted image and their corresponding original(ground truth) image. Publicly available dataset.
- The dataset used for **vector database reconstruction**: [Unsplash]: It has 25000 nature themed unsplash photos, 25000 keywords and 1 million searches.

3 Expected Impact for Creators

- **Faster Workflows:** Text and logo edits go from minutes to under 20 seconds, perfect for trending content.
- **Easy Global Reach:** Translate signs or menus instantly for different markets without reshoots [7].
- **Quick Color Grading:** Emotion based color grading presets speed up editing by automatically applying mood driven adjustments, reducing the amount of manual color correction needed and making the overall editing process much faster.
- **Instant Cleanup:** Removing shadows or clutter saves a lot of time and can be done easier compared to manual edits [5].
- **Faster A/B Testing:** Generate multiple ad or mood variants instantly to see what works best.
- **Revive Old Content:** Update dates or seasonal tones to get more value from past shoots.
- **Better Conversions:** High-quality, clean product images can significantly boost conversion rates by improving trust and clarity for shoppers [5].
- **Accessibility:** Brings professional-level retouching to anyone, letting small creators and merchants match big-brand looks without design skills.

4 Risks, Ethics & Mitigation

- **Misuse:** Misuse and misinformation pose significant risks, such as creating convincing deepfakes that could mislead or manipulate public opinion. To address this, **synth id** is added in the features.
- **Cultural Bias:** Emotion-based models risk reflecting cultural bias, as they often associate colors with emotions based on dominant cultural norms, which can misrepresent or overlook diverse perspectives. Human-in-the-loop designs and interfaces that explain and allow users to adjust emotional mappings is added to help mitigate these risks.
- **Bias in Training Data:** Privately curated datasets can carry hidden biases from selective collection and can lead to incorrect outputs[15]. To address this, only open source licensed datasets were used.

References

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