Beauty in a Digital World

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The total **revenue** from the **global beauty industry**, which includes skincare, fragrance, makeup, and haircare, was **$430 billion** in 2022, and the beauty industry remains highly profitable, with **EBITDA margins** of **30%**. Although COVID-19 initially decelerated the industry's growth, digital transformations, primarily through **e-commerce**, allowed for a rapid recovery. In 2022, **online** beauty **sales** stabilized at approximately **20%** of all sales, yet digital tools play a pivotal role in all channels of beauty sales. Some of the **key tools** include personalization quizzes, AR/VR technology, SaaS products, NFTs, the metaverse, and TikTok. As big data infiltrates every industry, for beauty brands to stay relevant, they have drastically been adopting new technologies into every facet of the consumer journey.
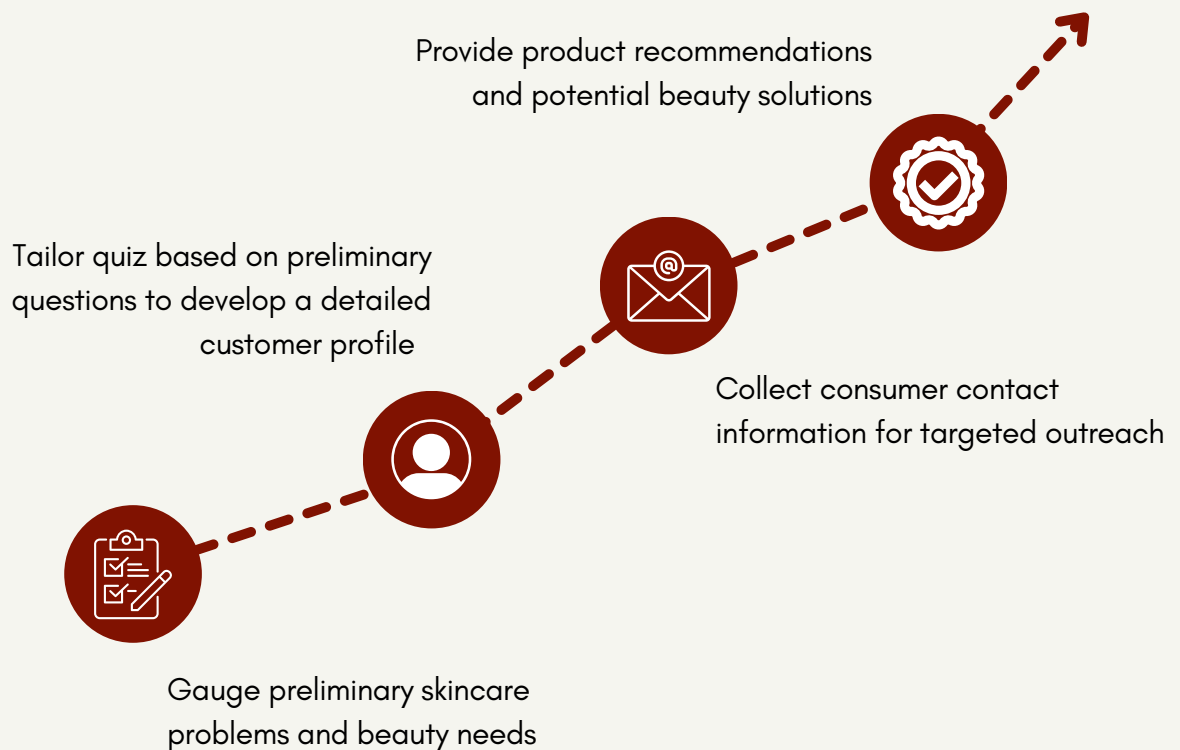
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This report was written by Yasmin Shalim, the Marketing & Alumni Relations Director of Pareto Solutions, who is a third-year, majoring in Data Science and Economics. She is passionate about the role of data science and sustainability in the beauty and fashion industries.

Personalization Features

The COVID-19 pandemic was a major catalyst for the rise in **e-commerce** in beauty, but because the industry relies heavily on facilitating tactile and visual experiences to secure purchases, companies were forced to find a **digital alternative** to satiate customers' desire to test products in-store and receive in-person expert staff advice. As a solution, the beauty industry turned to personalization quizzes, which allow customers to input data about their product preferences and beauty concerns and receive **customized product recommendations**, often facilitated by complex **machine learning** algorithms. Even after the pandemic, the ease of online transactions has made e-commerce a core channel for consumers, and today, over **65%** of major cosmetics retailers provide personalization quizzes on their website.
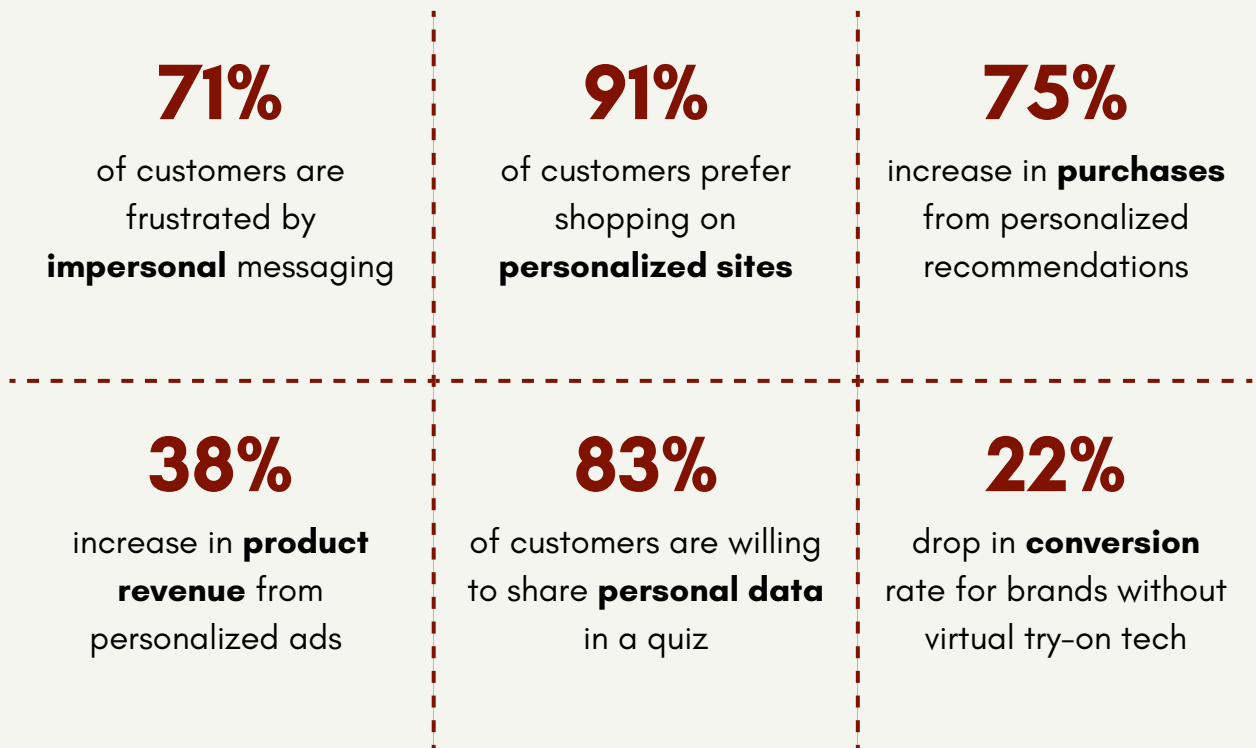
User Flow for a Personalization Quiz:

Provide product recommendations and potential beauty solutions

Tailor quiz based on preliminary questions to develop a detailed customer profile

Collect consumer contact information for targeted outreach

Gauge preliminary skincare problems and beauty needs

The most effective quizzes are **transparent** about their quiz methodology on a high-level by explaining how recommendations are generated. They also prescribe the products of best fit and have a direct path to purchases by **reducing choice overload**, one of the most significant causes for **abandoned shopping carts**.

Personalization Features

Consumer Insights:

71%
of customers are frustrated by **impersonal** messaging

91%
of customers prefer shopping on **personalized sites**

75%
increase in **purchases** from personalized recommendations

38%
increase in **product revenue** from personalized ads

83%
of customers are willing to share **personal data** in a quiz

22%
drop in **conversion** rate for brands without virtual try-on tech

Sephora App Case Study:

Sephora, a multinational beauty and personal care retailer owned by the French conglomerate LVMH, home to Louis Vuitton, Christian Dior, and numerous other luxuries, is one of the leading innovators in the beauty space. Among the 300+ brands in its list, Sephora has developed its own private label and spearheaded **digitization** through **AR/VR** applications, **machine learning**-based recommendations, a strong **e-commerce** footprint, and more. Its most notable contribution arguably is its **app**, which has consistently landed **#1** on Sailthru's Retail Personalization Index. Sephora's app prioritizes building tailored profiles for its users, curating product recommendations with **high sales conversions**, and fostering a tight-knit **community**. Alongside the digital store, store locator, and personal profile, Sephora developed a community tab that operates like Reddit, allowing app members to discuss their favorite products and beauty tips as well as have questions answered by Sephora staff. Overall, Sephora has garnered over **2 millions users** through its customer-centric design.

Personalization Features

Core App Technologies:

Beauty Profile

- Users fill out information on their skin and hair type and shade as well as fragrance and brand preferences to receive **tailored** product picks
- Color IQ Shade Finder: Translates a foundation shade from one brand into a color profile to find **matches** across other brands

Virtual Artist

- Partnered with ModiFace to allow consumers to **virtually try on** makeup in a real-time video
- Technology scans a user's face, recognizes the most compatible foundation shade, and recommends products with a **shade match**

Fragrance IQ

- Users fill out a scent profile to receive perfume **recommendations**
- **Omnichannel** Integration: Partnered with Inhalió to use dry air delivery services in stores for customers to test scents without physically trying them on

Secrets to Success:

☑ Loyalty points create a **gamified** experience and are **consistently advertised** via discussions during in-store consultations, multiple markings in the app, and references in email communications. Loyalty programs increase customer spend by **56%**.

☑ **Data** saved from beauty profiles are used in **targeted product pushes**. For examples, customers with dry skin, as indicated through the app's quiz, will intentionally receive a round-up email of the best cleansers for dry skin, differing from the email for oily skin consumers.

☑ Data is traced **across channels** such as when a consumer searches for a product on the website or app and then buys it in store to better understand search and purchase habits and **prevent abandoned carts**.

Startup Spotlight:

With the launch of **Sephora Accelerate**, an incubation program dedicated to supporting diverse founders in the beauty space, and **acquisitions** from large beauty brands like **L'Oréal**, many startups are leading the charge on transforming personalization within the industry. One company is **Hama Beauty**, which has partnered with over 400 brands, that allows users to take a quiz detailing their skin tone and conditions and receive a **tailored catalogue** of products across multiple brands, using **natural language processing** and other machine learning techniques to analyze product descriptions and reviews. **Tari Kandemiri**, the founder of Hama Beauty and a management consultant at Accenture, explains the importance of personalization below.

Hama Beauty Quiz:
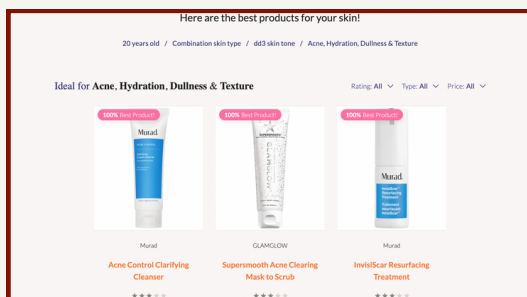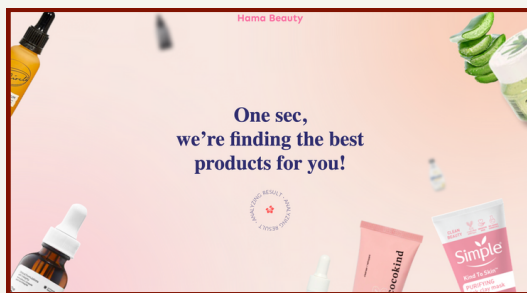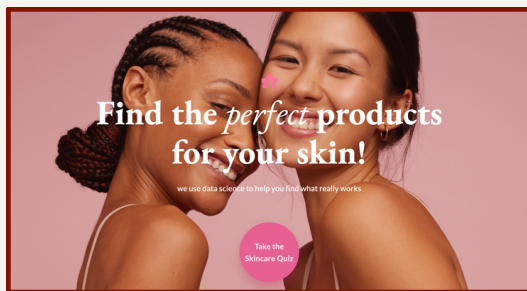
What inspired you to start Hama Beauty and expand the scope of personalization in beauty?

Tari: As an athlete, I had to deal with dark spots on my skin and had a hard time finding products suited for hyperpigmentation. When I would go to Sephora and ask for help from employees, they would often tell me that their responsibility is to pitch products from an assigned brand and that they did not have the expertise to help me with hyperpigmentation. Because of this, I was forced to spend **countless hours** reading forums and watching reviews to resolve a fairly common condition. I wanted to help combat this chaos and make product matching a more **seamless experience**, so leveraging my background as a computer science major, I decided to **develop** a digital product that would calculate the best recommendations for products, tailored to an individual's needs. Overall, my goal was to make skincare **less time-intensive** and more **approachable**.

Personalization Features

What do you think are the biggest motivators for businesses to partner with Hama Beauty or expand their digital offerings in general?

Tari: Tools like personalization quizzes **remove** the **guesswork** customers engage in and direct them to products that are more likely to work. It also creates a level of comfort, security, and **certainty** that a brand is truly the best fit. Without a tailored catalogue of products, customers might be **overwhelmed** or miss out on products that are suited for their needs, leading to a **loss** in **sales**. Hama Beauty's quiz uses language that makes sense to consumers and bridges the gap with detailed product descriptions, while making product catalogues more personalized and approachable.

What do you see as the future of personalization in beauty?

Tari: I would love to see real-time, **in-person creation** of skincare products. For peak customization, I could walk into a store and take a quiz, and from my profile, the staff could formulate a product perfectly suited to my needs and ingredient preferences. I recognize that this would take a lot of resources to work out the appropriate supply chain and ensure profitability, but data is valuable tool for heading in this direction.

How do beauty brands benefit from data collection?

Tari: Consumers are becoming more confident of their **preferences**, yet sometimes brands **don't have access** to this information, especially because of **rapidly evolving trends** and lack of diverse representation within companies. For example, sunscreen companies sometimes **neglect** the **needs** of people with darker skin tones and fail to recognize that the presence of a white cast is something that deters people away from products. However, through more realtime, authentic data collection, personalization quizzes revealed that sunscreen offerings should be updated to include tinted versions and reformulated to avoid white casts. Overall, data helps brands connect with **more demographics**.

The interview was conducted by Yasmin Shalim, a Pareto Solutions member. To learn more about Tari's work, check out hamabeauty.com.

Rise of SaaS

SaaS (Software as a Service) refers to a licensing and delivery model via the **cloud** that allows users or companies to access a **software** product typically through **subscriptions**.

$138 B
total market in 2022

241%
increase in usage between 2017 and 2022

Benefits for Businesses:

- ☑ Low overhead and maintenance costs due to a pay-as-you-go model

- ☑ Low installation time with only a few hours required to deploy to the cloud

- ☑ Routine updates and customization around business strategy

Case Studies:

ModiFace

ModiFace is an **augmented reality** beauty company launched in 2006 that was acquired by **L'Oreal** in 2018. It partnered with **Sephora** to develop the **Virtual Artist** tool that allows consumers to try on products on a live video of their face and compare product swatches virtually on their hands. ModiFace initially specialized in color cosmetics, foundations, eyeliners, and mascara but evolved to cover skincare and hair care products. After the success of its virtual try-on tools, ModiFace developed a tool compatible with Facebook Messenger and livestreaming platforms that displays step by step makeup **tutorials** live on a user's face through video.

Advantage: Custom Features Based on Company Preferences

- Estée Lauder: Lifelike foundation textures

- MAC: High color vibrancy for lipsticks

Business Model:

- $200,000-500,000 annual **fee** for partnerships
- 3 **platform** options: mobile, online, in-store
- Businesses can add new products to their database with no additional cost

Rise of SaaS

Estée Lauder

Perfect Corp is a beauty and fashion tech solutions company that uses **AI** and **AR** technologies and SaaS products to enhance customer experiences. It has partnered with Estée Lauder to develop tools, including iMatch Virtual Skin Analysis, Lip Virtual Try On, and iMatch Virtual Shade Expert.

iMatch Virtual Skin Analysis

- Users send a selfie and **AI analysis** determines skincare products that best match their skin tones and conditions
- The analysis **visualizes** portions of a user's skin that could be improved and explains potential causes of issues
- Users are provided discounts, free shipping, and samples to increase **conversion rate** after using the AI tool

Lip Virtual Try On

- Marketed as being able to try "30 lipstick shades in 30 seconds"
- Led to a **2.5 times** higher **conversion rate** for lipstick purchases

iMatch Virtual Shade Expert

- An **AI algorithm** determines the best shade match while allowing users to virtually try on foundation
- The AI model is trained on approximately 90,000 skin tones to promote **inclusion**
- iPads with this technology are integrated into vanity mirrors in 45+ stores to create a **seamless connection** between digital platforms and in-person shopping

Metaverse & NFTs

The **beautyverse** is a buzzword that often appears in discussions of digital strategies in the beauty industry to increase e-commerce and customer loyalty. It is a term to describe the incorporation of the beauty industry into the **metaverse**, a 3D digital space, dubbed the next rendition of the Internet and powered by **virtual and augmented reality**, enabling gaming, business, and lifestyle experiences. A core component of the beautyverse is NFTs (**non-fungible tokens**), which refer to **blockchain**-based digital assets with unique metadata and identification codes that can be sold or traded but have restrictions on downloads, copying, etc.

$5T	**400M**	**60%**
projected **valuation** of the metaverse in 2030 (McKinsey)	active metaverse **users**, most of which are teenagers on Roblox	of millennials want **products** they own in their digital ecosystem

Metaverse Use Cases:

A core goal of the metaverse is to **break down** distance, language, ethnic, and logistical **barriers** to accessing beauty and aesthetic experiences. As a result, a classic offering from beauty companies on the metaverse is a **virtual store** that allows users to try on and purchase products, especially convenient for customers without a physical store nearby. To create an immersive experience, brands have incorporated **games** with their products into their virtual stores, which encourage customers to more routinely check out brands' websites. Beauty brands also host **virtual events** for customers to meet beauty specialists and influencers or take classes. A common platform for these events is **Roblox**, to capitalize on the teenage market. Urban Decay partnered with Roblox to sponsor **Paris Hilton's Cryptoween**. The experience allowed participants to virtually wear outfits inspired by Hilton's previous Halloween costumes, try on new Urban Decay products, take virtual selfies with Paris Hilton, and compete in a virtual modeling runaway. This event highlighted how lucrative NFTs in the form of virtual products and makeup looks for avatars are.

Metaverse & NFTs

Case Study: Too Faced x BrandLab360

Explore a mansion with rooms themed around proucts and links to **purchase** them

Collect hearts and learn about collaborations and the **history** of Too Faced

Play **mini-games** inspired by products such as the Lip Injection Gloss

Motifs to augment **brand values** e.g. bunnies roaming around the virtual garden to advertise PETA approval and no animal testing

NFT Examples:

Estée Lauder provided free Advanced Night Repair glowing auras to avatars that participated in the 2022 **Decentraland Metaverse Fashion Week**.

Clinique collaborated with Daz 3D to help combat lack of **diverse representation** in beauty by designing non-fungible people of different skin tones and textures and hairstyles, complete with Clinique makeup looks to serve as realistic avatars in lieu of the limited features in standard avatar design software.
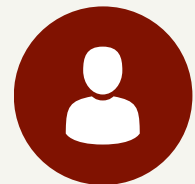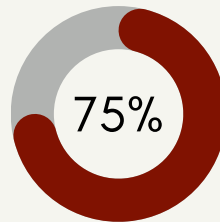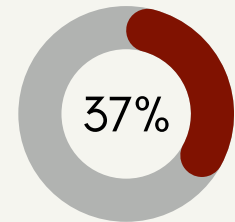
TikTok

TikTok has become one of the major sources of sales and information dissemination, especially for Gen Z and Millennials. With **#beauty** amassing over **207 billion views,** beauty brands are spending a significant portion of their **marketing** and advertising **budgets** on this platform.

89%
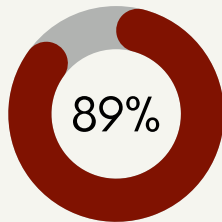
of beauty consumers who use TikTok **purchase** beauty products shown on TikTok

75%

of 21–34-year-olds buy from brands with direct **social media shops**

37%

of Gen Z receives **skincare knowledge** from TikTok compared to 3% from Google

Why TikTok?

- Instant **skincare advice** without having to wait for a dermatologist

- Easy-to-follow **makeup tutorials** that more aligned with the shortened **attention** span of Gen Z than YouTube's longer content

- In-depth product **reviews** with a **visual** component

- The algorithm personalizes a user's feed based on their search history and engagement, which allows product recommendations be **tailored** to specific beauty needs
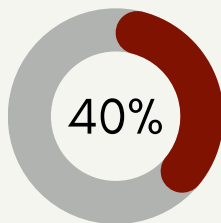
- **Gamifies** the beauty experience with trends, building a sense of **community**
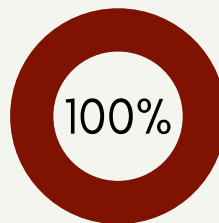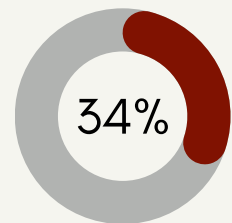
TikTok

Business Benefits:

Because businesses are seeing high returns on their investments into TikTok marketing via product sales and brand engagement, companies like Estée Lauder have gone on to spend **75%** of their marketing budgets on beauty **influencers**.

40%

revenue growth for beauty companies that create the perfect **fit** between their brand's content and customers

100%

increase in **year-on-year growth** for beauty brands from TikTok in 2021

34%

faster **growth** for beauty brands that use **TikTok versus traditional** marketing

Successful Examples:

e.l.f.

e.l.f. beauty created the **#eyeslipsface challenge** with an original music track for TikTok users to design content with, showcasing their diverse perspectives on beauty.

- ☑ Regarded as one of the **biggest** TikTok campaigns with over **7 billion views**

- ☑ Reese Witherspoon and other **celebrities** joined in without endorsement

- ☑ Became the **top-rated beauty brand** for Gen Z in 2022

- ☑ After declining sales in 2018, e.l.f. had 16 consecutive quarters of **growth**

TikTok

Through brand user-generated acne-prevention TikToks, The Ordinary had a **426% sales uplift** in its AHA (Alpha Hydroxy Acid) 30% + BHA (Beta Hydroxy Acid) 2% Peeling Solution product.

☑ Success not only from curated content but also **influencer** word-of-mouth

☑ Found a **brand niche** compatible with its target audience: accessibility with lower prices ($6-10) paired well with content surrounding ingredient and skincare education

☑ Relied **less on PR** and sending free products and instead collaborated with **current shoppers**

Downsides:

Microtrends & Overconsumption

Microtrends refer to **subcultures** with specific fashion and beauty looks, lifestyle choices, etc., that are **cycled** every few **weeks** or months, and are often **repackaging** of the same styles with new labels. For example, the "that girl" trend became "clean girl" then "vanilla girl" then "Sofia Richie-inspired". While all these trends drew from the concept of quiet luxury and neutral tones, brands and influencers promoted them as distinct styles to encourage people to get **rid** of their current products and purchase new ones. Videos of people **dumping** their wardrobe to embody Sofia Richie's quiet luxury, whether real or pretend, signaled to many young, impressionable users that **wastage** is normal. The cycling of microtrends also causes **anxiety** among viewers to stay relevant and the dilution of individual expression. Further, TikTok beauty influencers often romanticize overconsumption with **large product hauls** that they later **return**, only for them to end up in landfills.

20-40%
of beauty products from **influencer hauls** end up as **waste**

50%
of bathroom **waste**, much of which includes women's cosmetics, is **recycled**

TikTok

Lack of Diversity & Inclusion

Microtrends often **co-opt** cultural practices and **ignore** their history. For example, a signature look of the "clean girl" trend is slicked-back hair, and using oil is labeled as a "clean" practice that has been newly discovered. However, this draws heavily from longstanding South Asian traditions of using coconut and other forms of oil for strong, radiant hair. This practice was previously seen as dirty and smelly but has since been reconsidered due to its popularity among white influencers. Further, even when BIPOC influencers attempt to reclaim and showcase their heritage, they are **paid less** and provided **fewer opportunities** for promotion.

29%
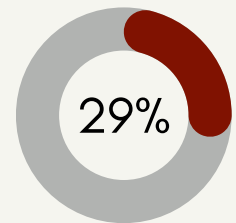
racial pay gap between White and BIPOC influencers

Beauty Filters

Downsides:

❌ Body dysmorphia and low self-esteem, especially in young teen women

❌ Aging up of young girl's faces, leading to sexualization

❌ Perpetuation of Eurocentric beauty standards through skin-lightening and feature adjustment

90%

of women who use beauty filters do so because of insults about their appearance and other societal pressures

Although TikTok is an imperfect platform that can exacerbate issues of diversity, the environment, and self-image, these problems exist in all forms of marketing. Ultimately, brands and influencers must be mindful of making culturally-aware and eco-friendly decisions regardless of the channels they use. TikTok can be an effective platform for building **community**, spreading **information**, and growing **passions** if done with the care of promoting **diversity**, **inclusion**, and **environmentally-friendly practices**.

Conclusion

As customers develop a stronger preference for **personalized products**, **tailored communication** from brands, and **gamified experiences** while shopping, beauty companies are transitioning to incorporating data science–backed quizzes and VR/AR software onto their sites to provide real-time product recommendations, partnering with SaaS software, developing virtual stores and events on the metaverse, and expanding their TikTok presence. With projected US **sales** of **$45 billion** in 2027 from e-commerce and a global **growth rate** of **6%** per year, the beauty industry is rapidly expanding due to digitization.

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