

SiliCircle

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Executive Summary

SiliCircle is a digital platform that supports the circular lifecycle of reusable silicone food storage bags through a mobile-first IS solution. Our platform enables individuals and eco-conscious businesses to monitor usage, share resources, and make data-driven sustainability choices.

Overview and Background

SiliCircle aims to provide an innovative transformation in how individuals and businesses engage with sustainability by enabling smarter, data-driven reuse of silicone bags. Our mission is to decrease waste from single-use plastics by promoting circular economy principles using easily navigable information systems. SiliCircle's 1st year objectives include launching SiliCircle mobile app/website with core features bag registration, usage/wash tracking, sustainability stats; establishing partnerships with at least three silicone bag manufacturers or eco-conscious retailers; reaching 10,000 app downloads and 1,000 paying subscribers, and 150k silicone bags tracked by SiliCircle. SiliCircle's Long-term objectives include extending SiliCircle to support and track the usage of other reusable household items, such as containers, wraps, cleaning products etc.; reaching 100k users and over 1 million silicone bags tracked by SiliCircle; developing B2B (business-to-business) analytics features with dashboards for tracking product reuse and sustainability metrics for businesses that want to make a good impact with products of SiliCircle. SiliCircle was founded by two Information Systems students who took notice of a frustrating pattern: despite the increasing popularity of reusable silicone bags, many users were consistently stopping using them after a while, due to forgetfulness, inconvenience, or lack of measurable feedback of their environmental efforts. This gap pointed us to an opportunity to use information systems not just to track and record usage, but to transform behavior and empower a broader reuse ecosystem, contributing to global environmental sustainability. SiliCircle was inspired by the widespread success of apps/home systems that track fitness, home inventory, or other data, and we envisioned a similar model for sustainability. SiliCircle will provide a digital platform that connects users with their purchased silicone bags through a simple mobile interface, where users can register bags conveniently via QRs, track all usages and wash cycles separately, and view personalized sustainability impact statistics such as "Waste Saved" dashboard, where users see their current tally of plastic bags avoided, carbon emissions reduced, and total washes tracked, visualized as points/progress bars; or "Sustainability Badges" to gamify eco-habits for consecutive reuse days with badges/check-points to encourage efforts. For businesses specifically, SiliCircle will provide a convenient dashboard to manage inventory, track customer returns and bag circulation, and view reports on business sustainability goals. SiliCircle will enable zero-waste businesses to operate return-and-refill programs without having to manually engage with data. Unique value proposition for SiliCircle is being one of the first-to-market IS solutions for reusable silicone bag lifecycle management, tracking

behavior-based reuse of products, reporting data and statistics on sustainability efforts that engage users, and providing B2B services for circular operations at scale. Target market for customers is eco-conscious individuals, primarily young adults (aged 18-40) who are active app users/social media users concerned about plastic waste, parents and families seeking reusable and innovative alternatives for convenient food storage. The target market for businesses is both the silicon bag manufacturers and zero-waste businesses that need circular packaging, primarily zero-waste retailers, restaurants, grocers, meal-prep services, etc. According to Statista, the reusable food storage products market is projected to reach \$2.6 billion globally by 2028. With over 15 million estimated U.S. households already using reusable bags, there is substantial room for a lifecycle-focused digital platform. SiliCircle estimates a \$200M addressable market in the U.S. alone ([Statista](#)). SiliCircle will strategically position itself as one of the pioneers of digital infrastructure for sustainable reuse. SiliCircle achieves product differentiation by delivering smart lifecycle tracking for silicon bags, nothing like anything currently offered by any bag manufacturer or sustainability app.

Market Analysis

The reusable food storage industry has been growing in recent years, especially thanks to increasing environmental concerns. In 2023, the reusable food container market was valued at about **\$4 billion** and it is **expected to continue growing through 2030**. Silicircle aims to appeal to these trends by providing a mobile solution for silicone food bag usage.

Some current competitors are reusable bag brands, such as Stasher and ZipTop, and sustainability apps like Olio and Too Good To Go. However these companies mainly focus on just physical products or general waste. Silicircle offers a platform for improving product use and tracking physical product life cycles, data insights for users and businesses, and incentives to encourage engagement.

SWOT analysis of Silicircle:

Strengths: Silicircle is one of the first to combine product tracking with digital data. It also provides measurable impact data and appeals to eco-conscious users.

Weaknesses: Relies on user engagement; tech development and integration challenges.

Opportunities: Rising environmentally-friendly demands from users and businesses.

Partnerships with food brands and retailers are also possible.

Threats: Copycat brands, or regulation changes.

As for the business strategy, there are a few varying forces. There is a moderate risk for new entrants, as there is a technological barrier. Supplier power is low because the product is simple and there are many different manufacturers. Buyer power is moderate, as customer support is essential to growing the digital aspect of Silicircle. The amount of substitutes is high, so the brand must remain innovative to retain users. Industry rivalry is growing, but Silicircle is able to differentiate itself thanks to its hybrid model.

Marketing and Sales Strategy

SiliCircle will use a multi-channel, value-driven approach to attract both individual customers and B2B partners. Strategically focusing on education, community-building, and digital visibility, SiliCircle will strive to build trust and long-term relationships with customers. SiliCircle will implement social media campaigns by partnering with sustainability influencers like athletes or eco-focused content creators. SiliCircle app and website will be optimized and accessible from all devices, including phones, tablets, smart TVs. SiliCircle will also publish short articles and infographics about sustainability efforts and plastic waste reduction. Specific features where users can track sustainability statistics and earn rewards to showcase in their profiles will also encourage users to use and save with SiliCircle. Pricing for the B2C (business-to-customer) model of SiliCircle includes two separate tiers: Free Tier, and Premium Tier (\$1.99/month). Free tier includes basic usage tracking with limited data and features, limited sustainability insights, and free tier badge collection. Premium tier allows for seamless mobile integration through all devices, unlocks advanced analytics (such as CO2 saved, plastic reduction over time), custom streak goals, community challenges, app integrations, and referral awards. Pricing for the B2B model of SiliCircle will be parallel with SaaS licensing model, so it will be based on business size and scale as well as the features used, where smaller stores can make use of a program as budget-friendly as \$50/month meanwhile larger businesses can customize their plan to include advanced analytics, API integrations with POS (point-of-sale) systems, multi-location management, etc. for larger scale.

Operations Plan

Silicircle's MVP (Minimum Viable Product) will focus on a cross-platform mobile app built using **React Native** and backed by a **Firebase/Node.js** cloud infrastructure. The app will include core features such as bag registration (via QR/NFC), usage tracking, reminders, sustainability stats, and gamified elements like badges and streaks. Development will be staged in three phases, where **Phase 1 (0–3 months)** is building the core tracking features and the sustainability dashboard, **Phase 2 (3–6 months)** is introducing user accounts, streaks, notifications, and referral features, and **Phase 3 (6–9 months)** is launching a B2B dashboard with admin tools and ESG export capabilities. App testing will be conducted through beta testers sourced from university eco-clubs and local zero-waste communities. User feedback will directly inform iterative UI/UX enhancements.

Silicircle is a **service-based digital platform**, so no physical products will be manufactured. However, we will **partner with existing silicone bag manufacturers** (e.g., Stasher, ZipTop, Grove Collaborative) to offer co-branded registration codes and referral bundles for app integration. Our service will be delivered via browsers, iOS and Android mobile applications, as well as web-based B2B dashboards, and as a cloud-hosted backend for analytics and content.

Supply Chain

Silicircle's supply chain is digital, with dependencies on **QR code/NFC tag providers** for physical product integration, **App stores** (Apple and Google for distribution), and **Cloud providers**

(Google Firebase or AWS for backend and analytics).Other logistics partners may later be involved to support co-branded shipping or circular bag recovery programs with business clients.

Facilities

The startup will operate as a **remote-first team**, requiring minimal physical infrastructure in the early stages. Core operations (development, marketing, customer support) will be coordinated via cloud-based collaboration tools (e.g., Slack, GitHub, Figma, Notion). As the B2B side scales, Silicircle may lease a small shared office or innovation lab space in Pittsburgh to house meetings, onboarding, and physical testing.

Financial Plan

Silicircle’s revenue will be generated through three primary streams: B2C Premium Tier subscriptions, B2B SaaS Licensing, and Partnership & Affiliate revenue. B2C Premium Tier subscriptions are priced at **\$1.99/month** or **\$19.99/year**. **B2B SaaS Licensing start at \$50/month** for reuse tracking + basic reporting, and is also customizable for larger scale for custom pricing (depending on requested features like API integration, multi-location dashboards, and ESG reporting). Partnership and affiliate revenue consist of earning commissions from silicone bag companies through co-branded digital onboarding, and earnings from sponsored content and data reports for ESG consultants or green tech companies.

Financial Projections (3-Year Forecast)

Year	Revenue	Costs	Profit (Loss)
Year 1	\$50,000	\$85,000	-\$35,000
Year 2	\$180,000	\$130,000	\$50,000
Year 3	\$400,000	\$220,000	\$180,000

Cash Flow

- **Year 1:** Bootstrapped and grant-supported (e.g., CMU Swartz Center, sustainability startup funds)
- **Year 2–3:** Funded by revenue + angel investment to expand dev and B2B support

Break-Even Point

- Break-Even point is projected in **Month 20–22**, assuming acquisition of 15 B2B clients and 20,000 active users with 10% conversion to paid plans

We are currently seeking seed funding and mentorship from sustainable tech investors and CMU-affiliated innovation centers, partnerships with silicone bag brands and zero-waste retailers, and feedback from developers, designers, and circular economy experts to refine our system. If you're passionate about building smarter systems for sustainable living — join us at SiliCircle app, and help close the loop.

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