E-PROCEEDINGS

INTERNATIONAL TINKER INNOVATION & ENTREPRENEURSHIP CHALLENGE (i-TIEC 2025)

"Fostering a Culture of Innovation and Entrepreneurial Excellence"

23 January 2025
PTDI, UiTM Cawangan Johor
Kampus Pasir Gudang

ORGANIZED BY:

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Editors

Aznilinda Zainuddin

Maisarah Noorezam

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A-ST067: REFINITY SMART COMPACT

Wan Nur Fatimah Ayuni W Ismail, Siti Hajar Ismail, Muhammad Irfan Bin Rozlan, and Noor Erni Fazlina Mohd Akhir
College of Computing, Informatics and Mathematics, Universiti Teknologi MARA, Terengganu Branch, Kuala Terengganu Campus, Terengganu, Malaysia

Corresponding author: Noor Erni Fazlina Mohd Akhir, noore800@uitm.edu.my

ABSTRACT

The Refinity Smart Compact represents a pioneering innovation combining user-friendly features, contemporary design, and eco-friendliness. Featuring an integrated smart sensor and a digital percentage display, it effectively tackles essential consumer concerns like the sudden depletion of powder. The robust, recyclable matte plastic guarantees durability while appealing to environmentally aware customers, making Refinity practical and sustainable. These characteristics position the product as a compelling option in the beauty accessories sector that caters to the rising demand for intelligent and green tools. This product holds significant potential for enhancement and adaptation as it progresses with technological developments. Future versions monitoring or more advanced connectivity features, such as app compatibility for automatic refill monitoring, or offer customization possibilities to accommodate various user preferences. These upgrades would allow Refinity to maintain a competitive advantage in a rapidly changing market while effectively meeting consumer demands. The innovation of Refinity is well-prepared for a successful market introduction. Its innovative design, which emphasizes sustainability and the incorporation of modern technology, differentiates it from conventional beauty compacts. By successfully combining functionality and visual appeal and constantly adapting to technological progress, Refinity positions itself as a forward-looking product that can hold its own in an increasingly competitive landscape.

Keywords: compact powder, mobile application, innovation, beauty industry

1. Product Description

Refinity is an innovative refillable beauty compact designed to enhance convenience and sustainability. Featuring a sleek design and advanced technology, it includes a weighted sensor that tracks the remaining product and displays it as a percentage, ensuring users know when to refill. The name "Refinity" combines “Refine” and “Infinity,” reflecting the product’s focus on precision, elegance, and eco-friendliness. With a refillable design and long-lasting battery life of up to two years, Refinity reduces waste by minimizing single-use packaging. It integrates smart technology to provide a modern, user-friendly solution for beauty enthusiasts and professionals alike. The compact connects to a mobile app via Bluetooth, enabling seamless interaction. The app syncs with the sensor to display remaining product levels and notifies users when refills are needed **(Figure 1)**. Additionally, it uses location-based services to suggest nearby refill stations or online platforms, checking real-time availability and operational hours to ensure convenience. Refinity qualifies as an incremental innovation, enhancing traditional compacts by solving the common issue of

running out of products unexpectedly. Its combination of smart features and sustainable design redefines beauty products, offering functionality, convenience, and environmental responsibility, making it a perfect fit for modern, eco-conscious consumers.

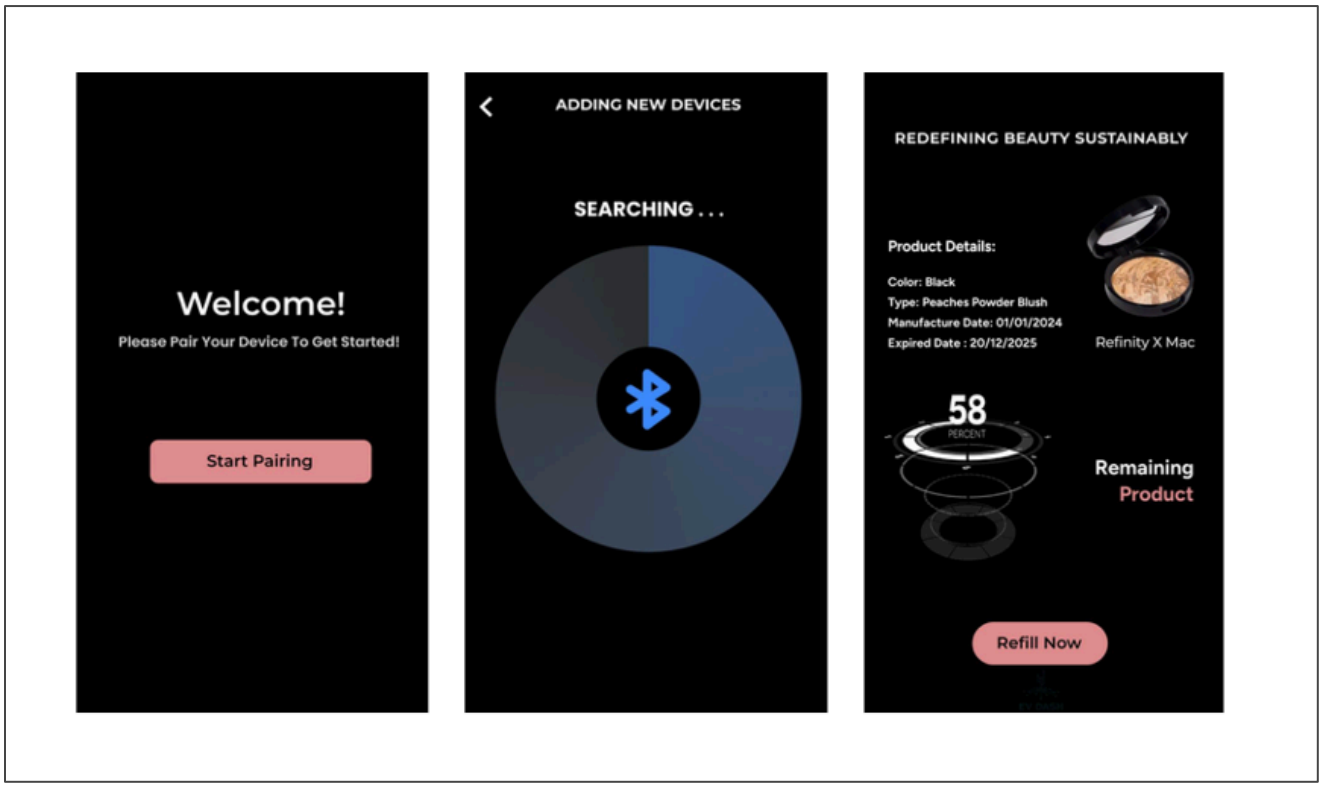


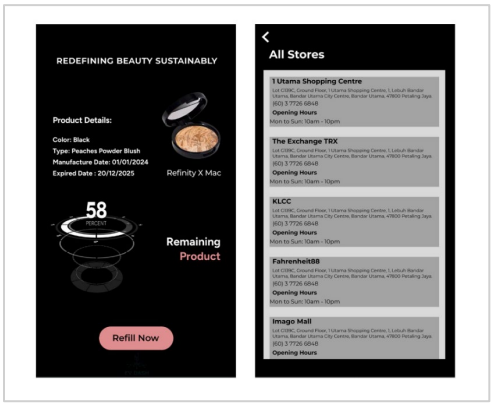
Figure 1. Mobile Application for Refinity

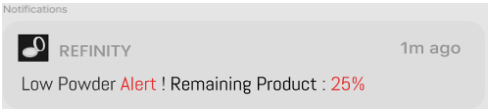
2. Product Features

The Refinity Smart Compact combines innovation and practicality, offering features like a smart sensor and digital display for accurate powder tracking. Its durable, eco-friendly design prioritizes convenience and sustainability by reducing waste. This user-friendly compact redefines traditional beauty tools with advanced technology and a commitment to environmental responsibility. **Table 1** provides a comprehensive overview of Refinity's features, emphasizing their purpose and user benefits. It illustrates how each element, from the weighted sensor to the mobile application, is designed to enhance user experience and convenience. By integrating cutting-edge technology with a refillable and eco-friendly design, Refinity sets itself apart in the beauty accessories market, demonstrating its commitment to innovation and sustainability.

Table 1: Refinity Smart Compact Features

Image	*Features*
	The durable matte casing constructed from premium, scratch-resistant matte plastic, the casing ensures long-term durability while maintaining a sleek, professional look. The recyclable material supports eco-conscious practices, aligning with modern sustainability trends.
	High-Quality Compact Mirror is embedded in the lid, the mirror provides a distortion-free and crystal-clear reflection. It is perfectly sized for touch-ups on the go to ensuring precision in makeup application anytime and anywhere.
	The hinge mechanism is engineered to withstand repeated use which will ensure seamless opening and closing. Its ergonomic design provides a satisfying tactile experience while maintaining the compact's structural integrity over time.
	Long lasting battery as it is powered by a CR2032 button cell battery which offers up to 2 to 3 years of uninterrupted use. This eliminates the hassle of frequent charging or replacement that will make it ideal for users who prioritize low-maintenance devices.
	A high-precision smart sensor integrated under the powder pan continuously tracks powder levels in real time. The sensor syncs with the companion mobile app to send low-powder alerts that will ensure users never run out unexpectedly. This feature minimizes waste and enhances convenience.





The Refinity Smart Compact features a built-in digital display that shows remaining powder levels as a percentage. Using an integrated weight sensor, it provides real-time monitoring, allowing users to easily track powder availability at a glance. This ensures precise, intuitive tracking without relying solely on the mobile application.

The Refinity mobile app extends functionality by providing notifications for low powder levels and a store locator feature. This integration combines technological convenience with everyday practicality.

3. Novelty and uniqueness

Refinity stands out for its seamless integration with a mobile application, redefining the traditional compact with intelligence and connectivity. The app syncs via Bluetooth to provide real-time alerts when product levels are low, ensuring users never run out unexpectedly. It also utilizes location-based services to suggest nearby refill stations, saving users time by avoiding closed stores or out-of-stock locations. This innovative integration enhances user convenience and elevates the overall experience. In addition to its smart features, Refinity prioritizes sustainability with a refillable design that reduces single-use packaging waste. Its durable, long-lasting battery powers the compact for up to two years and is replaceable, supporting a sustainable product lifecycle. This eco-friendly approach aligns with the values of modern, conscientious consumers. Refinity shows incremental innovation by enhancing the traditional compact foundation with features like a weight sensor, digital display, and app connectivity. These refinements improve usability and convenience without altering the compact's core purpose as a portable cosmetic. By blending familiar functionality with cutting-edge technology, Refinity transforms a classic beauty product into a sophisticated, sustainable, and user-friendly solution, catering to the needs of today's eco-conscious and tech-savvy consumers.

4. Benefit to mankind

The Refinity Smart Compact is a cutting-edge device designed to revolutionize environmentally conscious beauty practices. Combining modern design, built-in sensors, and a digital range, it prevents product waste while being user-friendly and practical. Crafted from matte recyclable plastic, the compact addresses environmental concerns and appeals to socially conscious consumers. Future advancements may include app integrations for automated refills and personalized user preferences, enhancing convenience and promoting sustainable practices. These innovations align with Refinity's mission to transform the beauty industry and encourage eco-friendly habits. Refinity exemplifies innovative problem-solving, merging functionality, aesthetics, and environmental responsibility. By making sustainability accessible and attractive, it empowers consumers to make positive choices, creating a meaningful global impact in the beauty sector.

5. Innovation and Entrepreneurial Impact

Refinity qualifies as an incremental innovation by enhancing the traditional compact without altering its core function. By including a weight sensor, weight indicator, and mobile app allows users to monitor the remaining product, eliminating the guesswork of when it might run out **(Figure 2)**. The app not only notifies users when a refill is needed but also suggests nearby refill stations, improving convenience and functionality. These features integrate seamlessly into the existing compact design, enhancing the user experience while maintaining its familiar form. Refinity’s integration of smart technology in a traditional product makes it an innovative solution in the cosmetics industry. It offers modern conveniences like real-time monitoring and refill planning, which address common user inconveniences. By combining advanced features with the compact’s original purpose, Refinity provides a meaningful, practical upgrade to a classic beauty tool, offering both sustainability and ease of use for today’s consumers.

6. Potential commercialization

A market survey for the Refinity Smart Compact was conducted across Watsons, Guardian, and Sephora, targeting consumers interested in innovative, high-quality beauty products. The survey, with 70 respondents, aimed to validate the product's ability to address issues like product wastage, inconvenience, and sustainability. It also assessed market demand, identified the target audience, and evaluated competitors to highlight Refinity's unique features, such as its refillable design and smart technology. The survey results were overwhelmingly positive, with most respondents satisfied with the product's features, which met their expectations. Customer satisfaction steadily increased, and the feedback highlighted opportunities for minor improvements in packaging and promotional efforts. These insights have helped refine product features and set an optimal price range. The results confirm that the Refinity Smart Compact is well-received, positioning it for a successful full-scale launch and commercial success in the market.

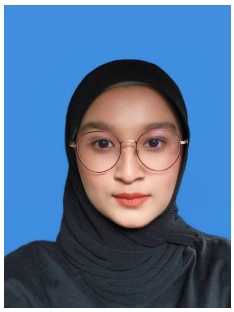
Figure 2. Refinity Innovation Idea

7. Acknowledgment

UiTM Terengganu Branch, Kuala Terengganu Campus

8. Authors' Biography

Wan Nur Fatimah Ayuni W Ismail is a final year student at UiTM. After completing the Sijil Pelajaran Malaysia (SPM), she further pursued her study in Diploma of Computer Science at UiTM, Arau branch, for 2.5 years before continuing her studies in Bachelor of Computer Science (Hons.).



Siti Hajar Ismail is a final year student at UiTM. After completing the Sijil Pelajaran Malaysia (SPM), she further pursued her study in Diploma of Computer Science at UiTM, Raub branch, for 2.5 years before continuing her studies in Bachelor of Computer Science (Hons.).

Muhammad Irfan Bin Rozlan is a final year student at UiTM. After completing the Sijil Pelajaran Malaysia (SPM), she further pursued her study in Diploma of Computer Science at UiTM, Raub branch for 2.5 years before continuing her studies in Bachelor of Computer Science (Hons.).

Noor Erni Fazlina Mohd Akhir is a Senior Lecturer at UiTM Terengganu, specializing in statistical management. Since 2009, she has excelled in teaching, research, and program development. Recognized for her contributions in innovation competitions, she is dedicated to fostering creativity, empowering communities, and inspiring future leaders in her field.