



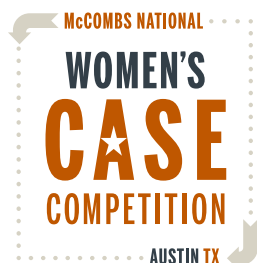
2024 NWCC CASE BRIEFING

APRIL 4TH-6TH, 2024
AUSTIN, TX

WRITTEN BY APPLE INC.



The University of Texas at Austin
McCombs School of Business





2024 CASE

Sustainability Synergy

2024



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Apple Business Background

Company

Apple revolutionized technology with the Macintosh in 1984. Today, Apple leads the world in innovation with our hardware products — iPhone, iPad, Mac, Apple Watch, Apple TV, and various accessories. In addition, Apple's software platforms — iOS, macOS, watchOS, and tvOS — provide seamless experiences across all Apple devices and empower people with breakthrough services, including the App Store, Apple Music, Apple Pay, iCloud and more.

Business Strategy

At Apple, we are committed to bringing the best user experience to our customers through innovative hardware, software, and services. Our solutions put a premium on forward-leaning, elegant design, superior ease of use, and seamless integration. Our strategy includes a unique Retail experience for digital and physical stores, and a comprehensive fulfillment program focused on convenience, speed, clarity, cost, and coverage. Throughout these touchpoints, we keep our unwavering commitment to privacy.

Business Organization

We manage our business primarily on a geographic basis. Our reportable segments consist of North America, South America, Europe, Greater China, Japan, and the rest of Asia Pacific. Although each segment provides similar products and services, each one is managed separately to better align with the unique market dynamics of each geographic region.

Apple's organization is functionally aligned in order to harness deep expertise across each area as we strive to deliver the best possible solutions to our customers. Spirited and rigorous debate is expected to ensure we have well-considered decisions and push for excellent outcomes. A premium is put on the customer experience, the quality of our products, and in doing the right thing, regardless of whether or not it's easy. Frequently there are trade-offs that need to be weighed.

Decisions at Apple are made through cross-functional teams. Our Hardware Engineering and Operations organizations partner closely throughout development and production of our products. One focus area for the Hardware Engineering team is reliability — how well a product will perform consistently. All new products and features go through rigorous mechanical, environmental, and user testing before they ever reach a customer. The Operations team is responsible for manufacturing and delivering these products at scale through innovative manufacturing techniques and a rapid, global supply chain. Read more about how Apple is organized for innovation [here](#).



Markets and Distribution

Apple's customers are primarily in the consumer, small and midsize business, education, enterprise, and government markets. In most major markets, we sell our products and third-party products directly to consumers and to small and midsize businesses through Apple Retail Stores, the Apple Online Store, and a direct sales force. We also employ a variety of indirect distribution channels such as third-party cellular network carriers, wholesalers, retailers, and value-added resellers.

Environment

The responsibility to protect our shared planet intersects every aspect of our lives. Apple has dedicated our resources and our best thinking to considering the environment in everything we do. We have led the industry in reducing our environmental footprint for years, and have now set an ambitious goal: By 2030, we are committed to being carbon neutral for our entire supply chain and the lifetime use of every product. View our [2023 Environmental Progress Report](#).

Customer Experience

We pride ourselves on obsessing over customer experience. Our goal is to deliver high-quality products into the hands of customers in the most optimal and sustainable way. We hold a very high standard for the quality of that experience and believe the speed and ease of obtaining the product should be as delightful as the product itself. We are also committed to the rights and safety of those involved in bringing our products to life - read more about our approach and progress in our [2023 Annual Progress Report on People and Environment in Our Supply Chain](#).



The Case

Case Summary: Sustainability Synergy

Apple is on an ambitious journey to make our products carbon neutral by 2030. The goal extends across our entire supply chain and includes the lifetime energy use of our customers' devices.

To support this inspiring and challenging goal, teams are coming together to find creative ways to make progress. The Operations and Hardware Engineering organizations recently joined forces to identify areas where they can contribute to Apple's 2030 goal. Teams identified packaging as an area of opportunity they can work on together to drive sustainability synergy.

Welcome to Apple!

Congratulations! You are hired to join Apple and lead the Operations and Hardware Engineering teams in efforts to reduce Apple's carbon footprint. Both organizations believe they can contribute towards Apple's 2030 goal by focusing on packaging.

Apple's leadership team has requested an iPad packaging transition strategy that advances our 2030 environmental goals, while also thoughtfully considering additional important factors such as customer experience, product reliability, and cost. The team has put together three packaging options as a starting point below, but Apple's leadership is also open to other well-considered ideas.

- Option A - Recycled cardboard box with plastic finished good wrap
- Option B - Cardboard box with paper finished good wrap
- Option C - Smaller cardboard box with plastic finished good wrap

Additional information about options A, B and C are in the exhibits. If you decide to explore an alternate idea, leverage the data in the exhibits, the information in the case, the linked content in **Exhibit G**, and any other information you feel is helpful.

As part of your Executive Update, develop and deliver a proposal that includes (but is not limited to) the following components: Product Development, Financial Analysis, Demand and Supply Forecasting, and Marketing Strategy.

Product Development

As you consider your options, identify how they each will influence packaging product development and consider their potential impact to customer experience. Customers have high expectations of how an Apple product looks and feels when it arrives, which includes a delightful unboxing experience when the product arrives unharmed. Any option will have associated tradeoffs that need to be considered. In your proposal, take the following items into account:

- Quantify the sustainability improvement of the selected option.
- Consider how the packaging solution upholds Apple's commitment to customer experience. What kind of testing should you consider to verify this?



Note: We do not expect a full engineering and test plan, but rather high-level proposals on how to consider the above items.

Financial Considerations

Determine the financial impact of the packaging proposal selected (refer to **Exhibit E**).

- Define the cost impact of your packaging proposal and how to measure the impact against the environmental benefit.
- Determine how product margins are impacted by your proposal.
- Consider options to offset the cost impact. For example, should you recommend increasing the price of the product? If so, will it have an impact on demand? Be sure to outline your assumptions.

Are there any other levers that impact cost that should be considered?

Demand and Supply Forecast

Using the unconstrained demand for the product with the existing packaging in **Exhibit C**, as well as the manufacturing capacity for packaging options A/B/C in **Exhibit D**: • Build a demand forecast for the new, recommended packaging solution.

- Create a transition plan from the existing packaging to the new, recommended packaging solution (ideas include but are not limited to: hard cutover, phasing, maintaining both the existing and new packaging solution, etc.)

Provide details for any assumptions made about supply availability and demand, especially if you propose an alternate solution to options A/B/C.

Marketing Strategy

Develop a Marketing Plan to rollout the new, sustainable packaging solution.

- Consider the Product and Pricing decisions made in previous sections.
- Think through Promotion strategies for the new, sustainable packaging solution.
- Consider the channel strategy that will capitalize on the new solution.

What other factors should be considered in the Marketing Plan?

Executive Update

Obtain leadership support for your recommended solution by highlighting key points, findings, and decisions. Leverage an Executive Summary (see example in **Exhibit F**) and a 15-minute presentation to tell a cohesive story - a story that conveys essential information efficiently to aid decision-makers in understanding the core content and in making informed choices. Please consider:

- Keep the deliverables concise and condensed to allow stakeholders to quickly grasp the main aspects.
- Leverage data-based analysis and visualizations to tell the story.
- Be creative with this section. It's an opportunity to display out-of-the-box thinking, idea visualizations and the team's personality.



Given the parameters above, please include any additional information you believe is important to influence leadership regarding your recommendation.

Exhibits

Exhibit A: Product Packaging Proposals

Options	Description	Other Information
Current	<u>Cardboard box</u> with <u>plastic</u> finished good wrap	Current packaging solution with a cardboard box and a plastic wrap.
A	<u>Recycled cardboard box</u> with <u>plastic</u> finished good wrap	Transitioning to recycled materials has resulted in the box having a coarser texture and matte finish, similar in texture to a cardboard box.
B	<u>Cardboard box</u> with <u>paper</u> finished good wrap	In testing, paper wrappers were found to be more delicate than plastic and more susceptible to water damage resulting in a higher failure rate in the manufacturing process. This results in more of them needing to be made to support the same number of units as the old plastic wrappers.
C	<u>Smaller cardboard box</u> with <u>plastic</u> finished good wrap	The reduced box size required all new manufacturing processes to be established as existing processes were developed for the old form. The smaller size has also resulted in charging cables no longer being included in the box, meaning customers that do not have charging cables will need to buy new ones.

Exhibit B: Sustainability Considerations

Options	iPad Weight (lbs)	iPad Dims (LxWxH)	Packaging Weight (lbs)	Packaging Dims (LxWxH)	Units per Pallet	Packaging Fiber Content	Packaging Recycled Content	Packaging Carbon Footprint (kg CO2e)	Product Integrity	Cost
Current	1.05	10x7x0.3	1.96	11x7.5x2	825	97%	56%	2.50	99.5%	\$10
A			1.80	11x7.5x2	825	97%	100%	1.00	98.0%	\$11
B			1.96	11x7.5x2	825	97%	56%	0.55	97.5%	\$12
C			1.00	11x7.5x1	1650	97%	56%	2.00	99.5%	\$9

Notes

- Product Integrity = Percent of products that arrive cosmetically and functionally undamaged.

Exhibit

C: Demand and Supply Forecast for Existing Product

<i>Existing Product</i>	Q2			Q3			Q4			Q1			EOH
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
2YA Sales	296	244	157	295	144	190	283	162	194	292	294	305	238
LY Sales	249	205	132	248	121	160	238	136	163	245	247	256	652
CY Sales	268	201	129	<i>243</i>	<i>119</i>	<i>157</i>	<i>233</i>	<i>133</i>	<i>160</i>	<i>240</i>	<i>242</i>	<i>251</i>	<i>45</i>

Notes

- Units in 000
- Combined sales for all channels
- Forecast/projection in gray and italicized for CY Sales
- “2YA” = two years ago, “LY” = last year, “CY” = current year, “EOH” = ending on hand (supply available at the end of the period)

Exhibit D: Go Forward Manufacturing Capacity

Options	Month 1-3	Month 4-6	Month 6-12	Month 12-24
A	330/Qtr	518/Qtr	802/Qtr	742/Qtr
B	519/Qtr	432/Qtr	655/Qtr	748/Qtr
C	200/Qtr	409/Qtr	409/Qtr	409/Qtr

Notes

- Units in 000
- “Qtr” = quarter = 3 months

Exhibit E:

Financial Summary

<i>Existing Product</i>	Two Years Ago	Last Year	Current Year (Forecast/Projection)
Sales	\$1,428,500	\$1,200,000	\$1,188,000
Cost of sales	\$728,535	\$624,000	\$629,640
Gross Margin	\$699,965	\$576,000	\$558,360
Operating expenses (SGA)	\$125,000	\$125,000	\$125,000
Operating Income	\$574,965	\$451,000	\$433,360
Gross Margin %	49%	48%	47%
Operating Margin %	40%	38%	36%

Additional Information Average Selling Price (ASP) \$500 \$500 \$500

*For simplicity, certain items have been omitted from the income summary. We do not expect or want teams to include missing items as we have not found them to be material to the objectives of the case.

Exhibit F: Executive Summary Examples

NWCC
University of ...

- Don't change these sections.
- We want them to be consistent across all updates.

April 6, 2024

Recommended Solution

fffff

Benefits

- f
- f
- f

Product Development Callouts

- f
- f
- f

Executive Update

- f
- f
- f

Challenges/Risks

- f
- f
- f

Financial Considerations

- f
- f
- f

Marketing Strategy Summary

- f
- f
- f

Transition Plan

• These sections are flexible.
• Use the existing sections or use the space to add images, roadmaps or other information to help you influence leadership.

NWCC
Bird Watching University

This is just an example. All information is made up.

April 6, 2024

Recommended Solution

Option A - Binocular harness strap with leather back patch

Benefits

- **Recycled leather** - The harness' back patch is made of recycled leather, reducing the product's carbon footprint.
- **Customer experience** - Neck strain relief and bouncing reduction contributed to increasing customer experience.

Product Visualization

Executive Update

Transition away from binocular neck straps to harness straps.

Benefits of harness straps are:

- **Neck strain relief** - Harness reduced neck strain by 60%.
- **Binocular bouncing reduction** - Harness prevented binoculars from bouncing, increasing Customer Experience by 20%.
- **Bird spotting speed** - Users reported their hands were more free to quickly spot those tricky Ruby-crowned Kinglets.

Search for harness straps that have a lower carbon footprint.

Challenges/Risks

- **Time to strap** - It takes users 30 seconds on average to put a harness on vs 5 seconds for a neck strap.
- **High carbon footprint of nylon/lycra straps** - The straps have a high carbon footprint.

Transition Roadmap

	LY												CY												CY+1											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Neck Strap																																				
Harness																																				

Exhibit G:

Links

- 2023 Environmental Progress Report (PDF) - https://www.apple.com/environment/pdf/Apple_Environmental_Progress_Report_2023.pdf
- iPad Product Environmental Report (PDF) - https://www.apple.com/environment/pdf/products/ipad/iPad_PER_Oct2022.pdf
- 2023 Annual Progress Report on People and Environment in Our Supply Chain (PDF) - https://www.apple.com/supplier-responsibility/pdf/Apple_SR_2023_Progress_Report.pdf
- Five Sustainability Metrics for Packaging: What Businesses Need to Consider - <https://groundedpackaging.co/blog/five-sustainability-metrics-for-packaging>