Snow Hawk E-Scooter Business Case

A go/no-go business case for a cold-weather electric scooter with heated handlebars, a detachable windshield and snow tires, aimed at college students and young professionals in the Midwest and Northeast. Our four-person team recommended GO. I led marketing and product management.

GO	$960K	$467.56	4.57 yrs
recommendation	capital invested before launch	estimated unit cost vs. $750 price	payback period

How we sized the market

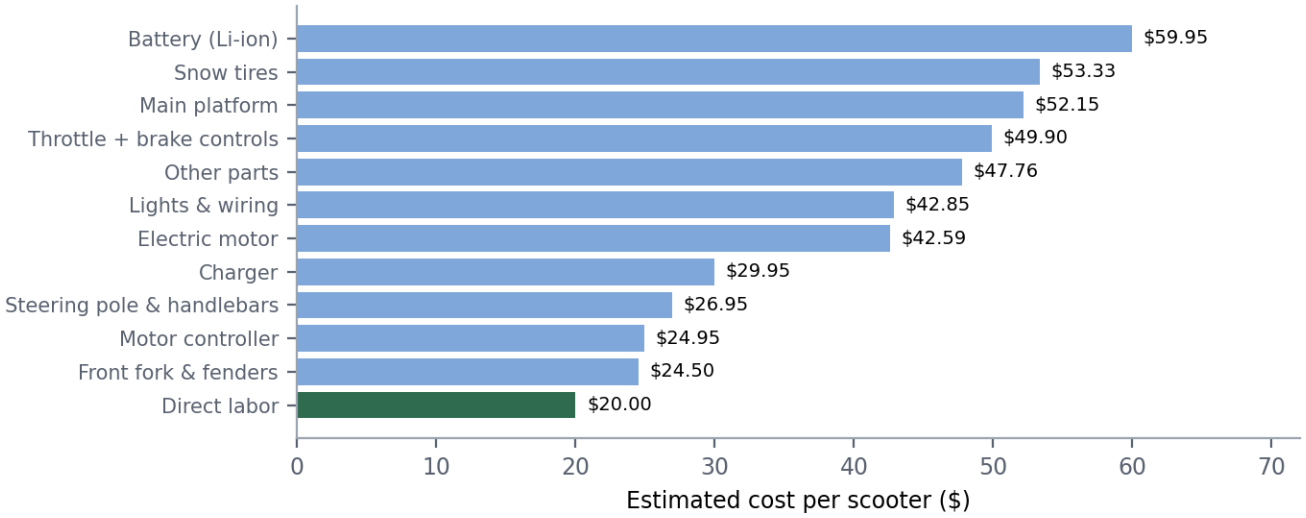
We defined two segments: college students (18–22) and young working professionals (23–27) in cold-weather regions. Using regional age, workforce-participation and 2023 enrollment data, the target population came to about 9.8 million people (5.51M in the Midwest and 4.25M in the Northeast).

The top three competitors (Bird, Segway and Razor) hold about 56% of the U.S. e-scooter market, and the remaining 44% is split among an estimated 250–500 smaller brands. That put a realistic share for Snow Hawk at 0.09% to 0.18%, which, combined with expected purchase rates, gave the two volume scenarios below.

Scenario	Market share captured	Purchase rate	Units per year
Low volume	0.09%	20% of segment	1,718
High volume	0.18%	25% of segment	4,295

Unit economics

Procurement priced each part and the tooling it needed. Battery, snow tires and the aluminum platform are the largest costs. At $750 the scooter targets a 30% margin, in line with the 25–30% typical for the category and justified by its premium, winter-specific features.



Itemized parts from the Phase II cost sheet plus $20.00 of direct labor. These items sum to $474.88, slightly above the $467.56 used in the team's summary; a later version adding packaging came to $496.33. Tooling for the platform, casting set, battery housing, tires and hand warmers is a separate one-time cost.

Product requirements we committed to

Feature	Target	Tolerance
Headlights	750 lumens	–50 / +100 lumens
Battery life (Li-ion)	500 charge cycles	–25 / +30 cycles
Detachable windshield	17 × 16.5 in	–0.5 / +1 in
Tire tread	10/32 in	–2/32 / +3/32 in
Heated handlebars	95°F	–5 / +10°F
Unit cost	$467.56	–$15 / +$20
Price to consumer	$750	–$10 / +$15
Payback period	4.57 years	±1.16 years

Go-to-market (my workstream)

Phase	Plan
Pre-launch	Digital campaigns, a campus ambassador program to gather feedback and seed early buyers, and early-bird discounts.
Launch	Direct-to-consumer through our own site plus Amazon (Amazon takes about 15% of the retail price, so DTC carries the higher margin).
Post-launch	Loyalty program, cross-selling winter accessories, and expanding into retail partnerships.

Key risks and how we planned for them

Risk	Mitigation
Tariffs raising unit cost by up to 25%	Bulk purchasing and alternative sourcing for the highest-cost parts
Competitors copying winter features	Lead with the premium feature set and build loyalty early
Seasonal demand	Demand forecasting and just-in-time production to limit off-season inventory

> **Why GO**
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> The product only works as a niche: a specific customer, a specific season, and a price that covers a higher unit cost. The team judged that no major competitor serves winter riders, the base-case payback is under five years, and the main risks have concrete mitigations.

Team: four students covering procurement, sales, marketing & product management (my role) and engineering/operations. Academic project, Fall 2024. Figures are the team's Phase II estimates.