

Qualcomm: Where to place the next engineering dollar?

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Teaching audience: MBA students and working professionals

The decision

On the afternoon of November 1, Qualcomm Incorporated released results for fiscal 2023 and filed its annual report. The company had just reported a sharp contraction in its handset business, while automotive revenue continued to grow. One week earlier, Qualcomm had announced its Snapdragon 8 Gen 3 premium mobile platform, positioning it around generative AI and on-device intelligence. Meanwhile, the company's automotive business was seeking to turn years of design work into production programs.

Imagine that you are advising Qualcomm's senior leadership as it plans the next fiscal year. A hypothetical new tranche of engineering and partner-enablement capacity can be directed toward one of three broad approaches:

1. **Concentrate on premium mobile and on-device AI:** deepen Snapdragon performance, power efficiency, AI tools and OEM support for premium Android devices.
2. **Accelerate automotive Digital Chassis:** prioritize connectivity, digital cockpit and ADAS/AD platform integration, customer engineering and program readiness.
3. **Stage the portfolio:** fund both areas against explicit customer, technical and commercial milestones, then redirect resources as evidence develops.

These are analytical choices for this case, not disclosed Qualcomm budget proposals. The company did not publish a project-level spending envelope, so you should not assume a particular dollar amount or percentage split. What should leadership prioritize, and what evidence would cause you to change your choice?

Qualcomm's platform proposition

Qualcomm developed from a wireless technology company into a supplier of semiconductors, software and intellectual property used in connected devices. Qualcomm reports three reportable segments: Qualcomm CDMA Technologies (QCT), Qualcomm Technology Licensing (QTL) and Qualcomm Strategic Initiatives (QSI); its business is conducted primarily through QCT and QTL. Qualcomm Technologies, Inc., a subsidiary, operates substantially all of the company's engineering, research and development functions and substantially all of its products and services businesses, including QCT. (Source: FY2023 Form 10-K, Items 1 and 7; Note 2.)

Management described a technology roadmap spanning advanced connectivity, low-power computing and on-device intelligence, with ambitions to extend capabilities developed in mobile into automotive, IoT and other connected products. That roadmap creates possible reuse across markets. It also places engineering teams under pressure to serve customer-specific product schedules and standards in businesses with different economics and time horizons. *(Source: FY2023 Form 10-K, Item 1, "Research and Development.")*

A mobile business under pressure

For fiscal 2023, QCT revenue was \$30.382 billion, down 19% from the prior year. QCT earnings before taxes (EBT) were \$7.924 billion; the reported EBT margin was 26%, compared with 34% in fiscal 2022. Within QCT, handset revenue was \$22.570 billion, down 22%; IoT revenue was \$5.940 billion, down 19%; and automotive revenue was \$1.872 billion, up 24%. Handsets therefore represented roughly three quarters of QCT revenue, while automotive represented about 6% (derived from the reported figures). The revenue categories are not separate segments, and Qualcomm does not report their individual profit margins. *(Source: FY2023 results release, pp. 2-3; FY2023 Form 10-K, Item 7 and Note 2. The 6% and three-quarter shares are derived.)*

In the fourth quarter, handset revenue was \$5.456 billion, down 27% year over year; automotive revenue was \$535 million, up 15%; and IoT revenue was \$1.383 billion, down 31%. The FY2023 filing said lower handset revenue chiefly reflected lower chipset shipments to certain major OEMs, primarily driven by macroeconomic weakness and customer inventory drawdowns. Separately, Qualcomm described weaker consumer demand for smartphones and other products. It attributed automotive growth mainly to demand for digital cockpit products. A single quarter can reflect product timing and inventories; it does not by itself establish the underlying trajectory of either market. *(Sources: FY2023 results release, pp. 2-3; FY2023 Form 10-K, Item 7, handset revenue discussion and macroeconomic trends.)*

The near-term handset outlook was uncertain. Qualcomm's filing identified customer concentration and customer product cycles as risks. It also said Apple was developing its own modem and that Qualcomm expected Apple to use its modem in some or all future devices. The filing did not specify the timing, affected models or revenue exposure. A leadership team could see the downturn as temporary inventory correction, a warning of structural exposure, or both. *(Source: FY2023 Form 10-K, Item 1A, handset demand, customer concentration and Apple modem risk factors.)*

At Snapdragon Summit in October, Qualcomm announced Snapdragon 8 Gen 3, a premium mobile platform designed with generative AI in mind. Qualcomm said flagship Android devices using it were expected in the coming weeks. Its demonstrations and claims presented a product opportunity, but they did not establish that handset makers or consumers would pay more, that the platform would gain share, or that AI features would produce higher margins. The company faced competitors investing in advanced mobile silicon: Apple's September 2023 iPhone 15 Pro announcement highlighted its A17 Pro chip and faster Neural Engine. Product claims from different suppliers are not directly comparable, and public announcements do not reveal customer economics. *(Sources: Qualcomm, "Snapdragon 8 Gen 3," October 24, 2023; Apple, "iPhone 15 Pro," September 12, 2023.)*

Automotive: growth and a long conversion path

Qualcomm's automotive offering spans connectivity, digital cockpit and advanced driver-assistance/autonomous-driving (ADAS/AD) technologies. Its filings describe long design-in periods and product lives, demanding safety and regulatory requirements, qualification work, high reliability expectations and low tolerance for defects. These requirements can make entry difficult, while also increasing development obligations, execution risk and the time before investment returns. *(Source: FY2023 Form 10-K, Items 1 and 1A, automotive business and risks.)*

Qualcomm cited an automotive design-win pipeline of more than \$30 billion. The estimate was based on forecasts supplied by automakers and Tier-1 suppliers and dated November 2, 2022. It represented the estimated future revenue potential of awarded programs. The figure was not backlog, recognized revenue, a probability-weighted forecast or contribution profit. Qualcomm did not disclose a conversion schedule, cancellation rate, program-level margins or the pipeline split among connectivity, cockpit and ADAS/AD. The company also cautioned that some automotive and IoT product categories may have high customer concentration. *(Sources: Qualcomm's January 2023 Snapdragon Ride Flex announcement, pipeline footnote; FY2023 Form 10-K, Item 1A.)*

In January 2023, Qualcomm said its Snapdragon Ride Flex platform was sampling and that production was expected to begin in 2024. This was a company expectation, not a guarantee of production volume or economic return. NVIDIA had announced DRIVE Thor in September 2022 as a centralized car computer spanning cockpit, infotainment and automated-driving functions; it named ZEEKR as the platform's first customer, with production vehicles planned for early 2025. These vendor announcements signal competition for future vehicle programs; they do not establish like-for-like performance, win rates or profits for either supplier. *(Sources: Qualcomm, January 2023 Snapdragon Ride Flex announcement; NVIDIA, September 20, 2022 DRIVE Thor announcement.)*

The resource constraint

Qualcomm spent \$8.818 billion on companywide research and development in fiscal 2023, up from \$8.194 billion in fiscal 2022. R&D equaled 25% of fiscal 2023 revenue, compared with 19% the prior year. This expense covered the company's businesses and research portfolio; Qualcomm did not disclose how much supported handsets, automotive or individual projects. It cannot be allocated across these opportunities as if it were a disclosed budget, nor does it show the cost of the next marginal engineering team. *(Source: FY2023 Form 10-K, Item 7, "Operating Expenses.")*

The competing commitments also differ in the feedback they can provide. Mobile products move through frequent device cycles and compete for customer design choices. Automotive programs may require extended integration and qualification before vehicles enter production, but can then remain in production for long periods. Shared work in compute, AI and connectivity may benefit more than one business. The amount of such reuse, who captures its value, and whether it reduces total cost were not disclosed.

Exhibits

Exhibit 1. QCT revenue streams, fiscal 2023

Revenue stream	FY2023 revenue	Year-over-year change
Handsets	\$22.570bn	–22%
Automotive	\$1.872bn	+24%
IoT	\$5.940bn	–19%
QCT total	\$30.382bn	–19%

Source: Qualcomm FY2023 results release, p. 3. Qualcomm recast prior-year RF front-end revenue across the streams in FY2023 Q1; the company notes this in the release. Values are reported revenue, not segment-level profit. Growth rates do not measure investment returns.

Exhibit 2. Selected fourth-quarter indicators

Revenue stream	Q4 FY2023 revenue	Year-over-year change
Handsets	\$5.456bn	–27%
Automotive	\$535m	+15%
IoT	\$1.383bn	–31%

Source: Qualcomm FY2023 results release, p. 3. Quarter-level revenue may reflect seasonality, customer inventory and product timing; do not annualize it.

Exhibit 3. What the public record does and does not provide

Publicly disclosed	Not disclosed in the reviewed materials
QCT revenue by handset, automotive and IoT streams; total QCT EBT	Stream-level margins or contribution profit
Companywide R&D expense	Project-level costs, team capacity or segment allocation of R&D
Estimated automotive awarded-program pipeline above \$30bn	Probability and timing of conversion, cancellation rates, product-category split or program economics
Snapdragon 8 Gen 3 feature positioning and expected device availability	AI willingness-to-pay, effect on share or ASP, or incremental margin
Automotive product scope and stated production expectations	Per-vehicle content, customer-level auto exposure or qualification costs

Questions for discussion

1. Which of the three resource-allocation approaches would you recommend at the cutoff date? What is the strongest case against your preferred approach?
2. How should leadership compare a large, contracting handset stream with a smaller, growing automotive stream when neither project's incremental economics are public?
3. What must be true for on-device AI to create value for Qualcomm? Separate technical performance, OEM adoption, user value and Qualcomm's ability to capture value.
4. How much weight should leadership place on the automotive pipeline? What does it establish, and what remains unknown between a design win and profitable production?
5. How could shared capabilities change the comparison? Which engineering, customer or financial data would help distinguish genuine spillovers from an attractive but unverified narrative?
6. If you choose a staged portfolio, specify the milestones, review dates and stop or scale rules. What risks might staging introduce?

Source note and cutoff

This case uses public information available by **November 1, 2023, 4:11 p.m. ET**, immediately after SEC acceptance of Qualcomm's FY2023 results filing and annual report. Qualcomm's earnings call was scheduled for 4:45 p.m. ET; no call remarks, transcript, later filings or subsequent outcomes are included. Key sources are Qualcomm's [FY2023 Form 10-K](#), [FY2023 results release](#), [Snapdragon 8 Gen 3 announcement](#), [Snapdragon Ride Flex announcement](#), Apple's [iPhone 15 Pro announcement](#), and NVIDIA's [September 20, 2022 DRIVE Thor announcement](#).