

Motorola Solutions - Where to Place the Next Technology Dollar?

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Case convention: The allocation assignment is hypothetical. No internal MSI budget decision or approved pilot is represented.

Decision assignment

Motorola Solutions (MSI) entered 2024 with a broad public-safety technology portfolio: land mobile radio (LMR), Video, and Command Center. On February 8, 2024, management described accelerating cloud adoption in Video, announced cloud and manufacturing partnerships, and forecast growth across all three technology areas. The company did not disclose how much of its research and development (R&D) budget was assigned to each technology, nor did it provide product-level returns.

For this case, assume MSI's leadership asks a hypothetical strategy team to recommend where to place the next discretionary increment of product-development and customer-enablement capacity. The choice is among accelerating cloud Video and Alta, maintaining a balanced investment across LMR, Video, and Command Center, or staging cloud deployment with additional customer support while retaining hybrid and on-premise options. The size and fungibility of this incremental capacity are not public facts.

Which path should MSI pursue over the next planning cycle? What evidence should determine whether to expand, maintain, redirect, or stop the investment? Students should distinguish management's expectations from realized results, acquired growth from organic demand, and an attractive mechanism from company-specific proof.

A portfolio with different clocks

MSI describes LMR Communications, Video, and Command Center as complementary technologies. Its Products and Systems Integration (PSI) segment combines products and systems integration; Software and Services (S&S) includes software and services across the portfolio. In 2023, MSI reported \$6.242 billion in PSI sales, 63% of company sales, and \$3.736 billion in S&S sales, 37%. These are segment totals, not separate hardware and software profit pools. Video represented 18% of PSI and 16% of S&S sales. MSI did not disclose the share of Video delivered through cloud services. [S1]

Exhibit 1. Selected 2023 company-reported results

Area	Reported 2023 growth	Reported contribution	Qualification
PSI LMR	9%	\$414 million	Includes acquired revenue
PSI Video	10%	\$100 million	Includes acquired revenue
S&S LMR services	5%	\$125 million	Includes acquired revenue
S&S Command Center	21%	\$124 million	Includes acquired revenue
S&S Video	20%	\$103 million	Includes acquired revenue

Source and limits: MSI FY2023 Form 10-K, printed p. 38. The filing also notes unfavorable foreign-exchange effects. These segment and technology measures are not organic growth rates, profitability measures, or returns on incremental investment. The company does not report comparable acquisition-adjusted growth by technology in the cited table. [S1]

The company reported \$858 million in R&D expense for 2023, up from \$779 million in 2022. MSI attributed the increase primarily to higher employee-incentive costs and acquired businesses, and said R&D covers LMR, Video, and Command Center. It did not provide technology or product allocation, project outcomes, or the share that could be redirected. The total establishes the scale of company-wide R&D, not an available pool for this assignment. [S1]

LMR and newer cloud services also operate on different customer and product timelines. MSI says LMR systems often remain in service for years or decades, with continued upgrades, monitoring, maintenance, and security needs. It offers Video cloud and hosted services, while Command Center is available in cloud-native, hybrid, and on-premise forms. MSI positions flexibility as a way to meet customer needs. These descriptions suggest different investment horizons and deployment conditions; they do not establish comparative customer lifetime value or which architecture customers prefer. [S1]

The cloud signal

On the February 8 earnings call, management forecast 2024 Video growth of approximately 10%, citing faster adoption of cloud offerings. It forecast approximately 10% Command Center growth and mid-single-digit LMR growth, or high-single-digit growth when normalized for the UK Home Office effect. These are management expectations at the cutoff, not realized results. The normalization is management-defined and should not be treated as directly comparable with the other forecasts. [S2]

Management said Alta, MSI's cloud-native fixed-video and access-control platform, contributed almost one-quarter of 2023 Video growth and had higher subscription attachment than a traditional Avigilon Unity sale. The call did not disclose Alta revenue, its customer or sales denominator, subscription retention, gross margin, acquisition cost, or the meaning of "contributed" in this comparison. The statement may indicate momentum, but students cannot derive Alta's revenue share or incremental return from it. [S2]

MSI also announced a Google Cloud relationship to support Alta and additional cloud and artificial-intelligence capabilities. It said Jabil would assume manufacturing operations at MSI's Canada and Texas Video sites. Management described the arrangement as creating redundancy, future savings, and scalability while allowing MSI to focus on Video engineering and design. The cited remarks did not quantify savings, engineering capacity freed, cloud costs,

contract terms, or vendor dependency and exit provisions. The partnerships create strategic options; their value remains unmeasured in the public record. [S2]

The case is therefore not simply “cloud or legacy.” An accelerated cloud strategy might strengthen a growing subscription offer and product learning. A broader portfolio could support complementary solutions and the installed base. A staged strategy might address customer readiness, security, integration, or data-localization requirements while maintaining hybrid and on-premise choices. Each path can preserve options and each has an opportunity cost.

What the evidence can-and cannot-say

The public-safety network literature offers one lens on integration. Liu, Guo, and Nault model districts choosing network assets and costly interoperability effort. Their analytical results make the preferred organization conditional: centralized provision can be optimal when interoperability is sufficiently efficient, while mixed provision may be preferable under other conditions. The model highlights cross-district spillovers and heterogeneous local needs. It is a stylized two-district model, not empirical evidence about MSI, cloud video, customer adoption, or investment returns. [A1]

A separate cloud-infrastructure study by Retna and coauthors may prompt discussion of customer enablement. Its published abstract describes data from 22,179 public-cloud infrastructure buyers between March 2009 and August 2012 and reports greater service usage among users receiving full support. However, the empirical methods and robustness analyses were not reviewed for this case; treat the study as provisional background. It concerns compute and storage services, not mission-critical video or public-safety agencies, and its reported comparisons should not be used as an MSI effect estimate. [A2]

MSI’s filing identifies cybersecurity, data-localization regulation, uncertain product development, and competition from commercial software firms, telecom carriers, and other providers as risks. These establish categories to investigate, not the probability or comparative cost of each risk across the three proposed paths. The filing also describes an Airwave regulatory remedy in the United Kingdom that led MSI to reduce related service backlog. That contract-specific adjustment should not be read as evidence for or against cloud adoption. [S1]

Exhibit 2. The decision evidence available at the cutoff

Evidence	What it supports	What remains unknown
\$858 million company-wide R&D expense	MSI invests across the three technology areas	Technology allocation, committed work, fungible capacity, and project productivity
2023 technology growth	Several business areas grew; S&S Video and Command Center were among the faster-growing categories	Organic demand, margins, cloud mix, retention, acquisition contribution by product, and incremental returns
Alta contribution and attachment statements	Management sees cloud-video adoption and subscription attachment as strategic signals	Absolute sales base, denominator, cohort renewal, customer economics, support burden, and causality
Google Cloud and Jabil announcements	MSI is building cloud and manufacturing relationships	Contract economics, dependency, capacity released, savings, and realized performance
Hybrid and on-premise offerings	Customers have multiple deployment architectures available	Segment-level preference, win rates, migration barriers, reliability, and lifecycle economics

Sources: MSI FY2023 Form 10-K and February 8, 2024 earnings call. Company claims and forward-looking statements are attributed; no cloud revenue share, product margin, or return is inferred. [S1, S2]

Three possible investment paths

Accelerate cloud Video and Alta. Direct more of the hypothetical increment toward cloud-native product development, subscription capabilities, and customer acquisition or migration. Management's adoption narrative, Alta's stated role in Video growth, and the announced partnerships support investigation. Against this path, growth includes acquired revenue, Alta's absolute economics are unavailable, and customers may face security, connectivity, procurement, or data-localization constraints.

Maintain a balanced LMR, Video, and Command Center portfolio. Allocate capacity across the technologies that MSI says work together. LMR's long-lived installed systems support ongoing upgrade and service opportunities; Command Center and S&S Video posted reported growth. Against this path, broad allocation may dilute scarce talent, and the economic value of cross-technology integration has not been measured.

Stage cloud deployment and enablement. Fund selected cloud product work alongside implementation, training, support, security, and interoperability; preserve hybrid and on-premise options. This could help MSI learn where customers are ready and what prevents adoption. Against this path, staged investment could delay product learning or adoption, and the public record contains no MSI-specific pilot conversion or support-cost data.

These descriptions are case-defined alternatives, not MSI's published plans. Students may combine or redesign them, but should explain what they would deprioritize and what evidence would change the allocation.

The choice

Assume the strategy team must recommend a one-cycle allocation of the next discretionary product-development and customer-enablement increment. The team should:

1. Choose and defend an allocation across cloud Video/Alta, the broader three-technology portfolio, and staged deployment or customer support.
2. Identify the customer segments or use cases to prioritize and explain how deployment architecture affects the choice.
3. Propose evidence gates for further funding. Potential measures might include qualified pipeline conversion, subscription attachment and renewal, time to deployment, support burden, reliability, security performance, customer contribution, and cross-technology adoption. These are proposed measures, not known MSI metrics.
4. Identify the strongest argument against its recommendation and the internal data MSI would need to resolve it.

Do not assume a specific budget, completed pilot, customer response, or product-level return. Do not treat company guidance as a realized outcome or an academic result as an MSI forecast.

Sources

- **[S1]** Motorola Solutions, Inc., FY2023 Form 10-K, filed February 8, 2024. Business and risk discussion, printed pp. 3-18; segment and technology disclosures, pp. 30-39. [SEC filing](#); [company annual report PDF](#).
- **[S2]** Motorola Solutions, Q4/FY2023 earnings conference call, February 8, 2024. Prepared remarks, printed pp. 3-5, including 2024 growth expectations, Alta, Google Cloud, and Jabil. [Company-hosted transcript PDF](#).
- **[A1]** Liu, Yipeng, Hong Guo, and Barrie R. Nault. 2017. "Organization of Public Safety Networks: Spillovers, Interoperability, and Participation." *Production and Operations Management* 26(4): 704-723. Model and findings. [Publisher article](#).
- **[A2]** Retna, German F., Chris Forman, Sridhar Narasimhan, Marius F. Niculescu, and D. J. Wu. 2018. "Technology Support and Post-Adoption IT Service Use: Evidence from the Cloud." *MIS Quarterly* 42(3): 961-978. Published abstract; full empirical methods and robustness not reviewed. [MISQ/AIS record](#).

All case information is limited to sources public by February 8, 2024. No later outcomes or strategic decisions are included.