

ACC-FPX5610 Assessment 4

Integrated Accounting and Budget Recommendation

Master Budget, Capital Investment, Cash Financing, and Control Plan

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Educational Sample Notice

This original fictional sample demonstrates a complete analytical approach. Learners should verify their current course instructions, use their own research, and adapt the facts and calculations before submission.

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Executive Summary

Meridian Medical Devices needs an integrated plan that converts the variance findings from the prior quarter into operating targets, cash requirements, and accountable management actions. This report recommends a next-year master budget built around 10,800 unit sales at \$145 per unit and a \$240,000 automated calibration cell that reduces material waste and labor hours beginning in the third quarter.

The projected annual sales revenue is \$1,566,000. Budgeted operating income is \$125,106 after variable manufacturing costs, fixed manufacturing overhead, and selling and administrative expenses. The capital project has an estimated net present value of \$45,274 at a 9 percent required return, an internal rate of return of approximately 15.8 percent, and a 3.43-year simple payback. Even if annual savings are 15 percent below the base estimate, the NPV remains positive at approximately \$4,433.

The project creates short-term liquidity pressure. With 60 percent of the equipment price financed by a five-year term loan, the quarterly cash budget requires a temporary line of credit that peaks near \$76,329 in the second quarter and declines to approximately \$27,654 by year-end while maintaining a \$75,000 minimum cash balance. The recommendation is to approve the investment subject to staged authorization, documented benefit ownership, monthly flexible-budget reviews, quality safeguards, and quarterly board reporting.

Strategic Context and Objective

The previous variance analysis showed unfavorable material usage, labor efficiency, variable overhead, and fixed-cost performance. Management needs more than a request to cut spending. It needs a coordinated budget that links demand, production, resource requirements, capital spending, liquidity, performance measures, and internal control. OpenStax explains that operating budgets and financial budgets should work together so that sales, production, capital assets, and cash financing support the same organizational plan (Franklin et al., 2019).

The objective is to restore margin without creating hidden risks. Meridian will use a participative process in which sales, operations, procurement, quality, HR, and finance agree on assumptions. The CFO retains final approval, but department managers are accountable for the assumptions and measures they can influence. The budget will be updated through a rolling forecast rather than treated as a fixed annual promise.

Planning Assumptions

Assumption	Budget Basis
Sales volume	10,800 units: Q1 2,400; Q2 2,700; Q3 2,900; Q4 2,800
Selling price	\$145 per unit
Finished-goods policy	Ending inventory equals approximately 15% of next-quarter sales; year-end target 420 units
Material standard	\$8.20 per kg; 4.00 kg/unit in Q1-Q2 and 3.85 kg/unit after automation in Q3-Q4
Labor standard	\$25 per hour; 1.50 hours/unit in Q1-Q2 and 1.30 hours/unit in Q3-Q4
Variable overhead	\$10.25 per direct labor hour
Fixed manufacturing overhead	\$78,000 per quarter in Q1-Q2; \$81,000 in Q3-Q4 including depreciation

Assumption	Budget Basis
Selling and administrative cost	\$6 per unit sold plus \$45,000 fixed per quarter
Cash collections	40% in the quarter of sale, 55% in the following quarter, and 5% uncollectible
Minimum cash balance	\$75,000
Capital project	\$240,000 cost; 5-year life; \$20,000 salvage; \$70,000 annual pre-tax savings
Assumption governance Every assumption should show its owner, source, approval date, and sensitivity range. Finance should lock approved standards in the planning system and record any later changes through a controlled version process.	

Sales and Production Budgets

Period	Unit Sales	Price per Unit	Sales Revenue
Q1	2,400	\$145	\$348,000
Q2	2,700	145	391,500
Q3	2,900	145	420,500
Q4	2,800	145	406,000
Annual	10,800	-	\$1,566,000

Period	Budgeted Sales	Desired Ending FG	Beginning FG	Required Production
Q1	2,400	405	400	2,405
Q2	2,700	435	405	2,730
Q3	2,900	420	435	2,885
Q4	2,800	420	420	2,800
Annual	10,800	-	-	10,820

Note. Required production = budgeted sales + desired ending finished goods - beginning finished goods.

The production plan limits unnecessary inventory while keeping a buffer for demand and delivery risk. Sales and operations planning should review the forecast each month. A forecast error larger than 8 percent or a service level below 96 percent should trigger a revised production plan.

Direct Materials, Labor, and Overhead Budgets

Period	Production	Material Quantity	Material Cost	Labor Hours	Labor Cost	Variable OH
Q1	2,405	9,620 kg	\$78,884	3,607.5	\$90,188	\$36,977
Q2	2,730	10,920 kg	89,544	4,095.0	102,375	41,974
Q3	2,885	11,107.25 kg	91,079	3,750.5	93,763	38,443
Q4	2,800	10,780 kg	88,396	3,640.0	91,000	37,310
Annual	10,820	42,427.25 kg	\$347,903	15,093.0	\$377,325	\$154,704

Note. Minor differences may occur from rounding. The automated cell reduces material usage and labor hours beginning in Q3.

The resource budget translates the operational improvement into measurable standards. The benefit owner should be the plant manager, supported by quality and engineering. Finance should not recognize savings merely because a standard was changed; actual material usage, labor hours, first-pass yield, downtime, and customer complaints must confirm the improvement.

Budgeted Operating Results

Period	Sales	Variable Manufacturing Cost	Fixed Manufacturing OH	Selling and Admin	Operating Income
Q1	\$348,000	\$205,620	\$78,000	\$59,400	\$4,980
Q2	391,500	231,323	78,000	61,200	20,978
Q3	420,500	224,446	81,000	62,400	52,655
Q4	406,000	216,706	81,000	61,800	46,494
Annual	\$1,566,000	\$878,094	\$318,000	\$244,800	\$125,106

Note. Variable manufacturing cost for units sold uses the applicable quarterly standard. The table is an operating forecast and excludes financing and income taxes.

The budget shows a weak first quarter and stronger performance after volume increases and the automation benefit begins. Management should not interpret the first-quarter result as failure if it follows the approved ramp-up plan. However, the rolling forecast must be revised if customer orders, installation timing, or realized savings differ materially from the assumptions.

Capital-Investment Evaluation

Capital-Budget Item	Result
Initial equipment and installation	\$(240,000)
Annual pre-tax cash savings, years 1-5	\$70,000
Estimated salvage value in year 5	\$20,000
Required rate of return	9.0%
Present value of annual savings	\$272,276
Present value of salvage value	\$12,999
Net present value	\$45,274
Internal rate of return	15.8%
Simple payback period	3.43 years

The positive NPV indicates that the present value of the expected cash benefits exceeds the investment at the 9 percent required return. The IRR is also above the hurdle rate. These measures support approval, but the recommendation depends on whether the savings are operationally realistic and whether the organization can manage the short-term cash need.

Annual Savings Scenario	Annual Savings	NPV at 9%
15% below base	\$59,500	\$4,433
10% below base	63,000	18,047

Annual Savings Scenario	Annual Savings	NPV at 9%
Base estimate	70,000	45,274
10% above base	77,000	72,502

Note. The project remains value-creating at 15 percent below the estimated annual savings, but the margin of safety becomes small.

Approval condition

The board should authorize the project only after operations, engineering, quality, and finance sign a benefits register that defines the baseline, savings formula, implementation date, responsible owner, and evidence required for validation.

Cash Budget and Financing Plan

A cash budget combines collections, operating payments, capital spending, and financing so management can anticipate liquidity needs. OpenStax recommends preparing cash budgets in short periods because timing differences can create shortages even when the annual income forecast is positive (Franklin et al., 2019). Meridian begins with \$100,000 cash and requires a \$75,000 minimum balance.

Cash-Budget Item	Q1	Q2	Q3	Q4
Beginning cash	\$100,000	\$141,314	\$75,000	\$75,000
Cash collections	359,200	348,000	383,525	393,675
Term-loan proceeds	144,000	-	-	-
Cash available	603,200	489,314	458,525	468,675
Operating, capital, and interest payments	(461,886)	(490,643)	(357,797)	(370,728)
Cash before line of credit	141,314	(1,329)	100,728	97,947
Line-of-credit borrowing	-	76,329	-	-
Line-of-credit repayment	-	-	(25,728)	(22,947)
Ending cash	\$141,314	\$75,000	\$75,000	\$75,000
Ending line-of-credit balance	\$0	\$76,329	\$50,601	\$27,654

Note. The \$144,000 term loan finances 60 percent of the \$240,000 capital project. Estimated term-loan interest and line-of-credit interest are included in cash payments. Figures are rounded.

The financing structure matches a long-lived asset with long-term debt and uses the line of credit only for seasonal working capital. The peak temporary borrowing is manageable if the bank commitment is obtained before the project starts. Management should negotiate covenant headroom, prohibit dividends while the line is outstanding, and require weekly cash reporting during Q2.

Integrated Recommendation

1. Approve the \$240,000 automated calibration cell because the base-case NPV is \$45,274 and the estimated IRR is 15.8 percent, subject to a signed benefits register and vendor acceptance testing.
2. Finance 60 percent with a five-year term loan and secure a committed working-capital line of at least \$100,000 before purchase orders are released. This amount provides headroom above the projected \$76,329 peak draw.
3. Adopt the 10,800-unit sales plan and 10,820-unit production plan as the opening budget, but update them monthly through a rolling 12-month forecast.

4. Use flexible-budget reporting so variable costs are evaluated at actual volume. Investigate the greater of \$5,000 or 3 percent, while escalating all quality, safety, compliance, and suspected-fraud exceptions regardless of size.
5. Release the second equipment payment only after installation milestones, control testing, employee training, and quality-validation results are documented.
6. Report financial and nonfinancial outcomes to the board each quarter, including NPV benefit realization, material usage, labor hours, first-pass yield, downtime, on-time delivery, cash balance, and debt compliance.

Control and Accountability Framework

Process	Accountability	Required Control Evidence
Budget assumptions	Department owners propose; finance challenges; CFO approves	Source support, version control, approval log
Capital purchase	Operations requests; procurement bids; CFO/board approves	Three bids, contract review, milestone payments, asset tag
Benefit realization	Plant manager owns; controller validates	Baseline, actual usage and hours, quality confirmation
Cash and financing	Treasury prepares; controller reconciles; CFO approves	Weekly 13-week cash forecast, bank reconciliation, covenant report
Variance reporting	Finance prepares; managers explain; executive team acts	Flexible budget, root-cause evidence, action owner and due date
Independent assurance	Internal audit tests design and operation	Quarterly control tests and project post-implementation review

COSO emphasizes that effective control supports operations, reporting, and compliance objectives. Meridian should therefore treat the budget as a controlled management process, not simply a spreadsheet. The IIA Three Lines Model supports clear ownership: operating management performs and controls the work, finance and compliance monitor and challenge, and internal audit provides independent assurance (Committee of Sponsoring Organizations of the Treadway Commission, 2013; Institute of Internal Auditors, 2020).

Implementation Roadmap

Timing	Milestone	Accountable Owner
Month 1	Approve assumptions, vendor, financing, controls, and benefits register.	CFO and board
Months 2-3	Order equipment; finalize process design; prepare training and validation plan.	Operations, engineering, quality
Month 4	Install first stage; test access, procurement, asset, and payment controls.	Project team and internal audit
Months 5-6	Complete installation; train employees; validate product quality and standard times.	Operations and quality
Months 7-9	Measure actual material and labor savings; update flexible budget and cash forecast.	Controller and plant manager
Month 12	Perform post-implementation review and decide whether to replicate the investment.	CFO, board, internal audit

Risk and Ethical Considerations

Risk	Possible Effect	Response
Demand risk	Sales volume below 10,800 units	Monthly order and forecast review; downside cash scenario
Implementation risk	Installation delay shifts savings beyond Q3	Milestone payment terms; contingency plan; vendor penalties
Quality risk	Faster process causes defects or calibration errors	Validation protocol; first-pass yield and complaint limits
Liquidity risk	Collections slow or costs exceed plan	Committed line, 13-week cash forecast, spending gates
Behavioral risk	Managers alter standards or defer costs to meet targets	Locked assumptions, audit trail, ethics escalation process
Cyber and access risk	Unauthorized changes to budget or vendor master data	Role-based access, change approval, activity logging

The IMA ethics standards require management accountants to communicate information fairly and objectively and to disclose information that could influence a user's understanding (Institute of Management Accountants, n.d.). Finance should not count projected savings as achieved savings, change the baseline after implementation, or exclude offsetting costs. The post-implementation review must report both positive and negative results.

Conclusion

The integrated budget turns the earlier variance findings into a practical plan. Meridian can generate projected operating income of \$125,106 and improve material and labor efficiency through the automated calibration cell. The capital project is financially attractive under the base case and remains slightly positive under a 15 percent savings shortfall. The main constraint is short-term cash timing, which can be managed through a five-year term loan, a committed line of credit, and close cash monitoring. Approval should therefore be conditional rather than automatic: management must document benefits, protect quality, maintain ethical reporting, and review performance through flexible budgets and independent control testing.

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Appendix A: Key Calculation Details

Calculation	Formula	Result
NPV of annual savings	$\$70,000 \times 3.88965$	\$272,276
PV of salvage value	$\$20,000 / 1.09^5$	12,999
Project NPV	$\$272,276 + \$12,999 - \$240,000$	\$45,274
Simple payback	$\$240,000 / \$70,000$	3.43 years
Q1 production	2,400 sales + 405 ending FG - 400 beginning FG	2,405 units
Q2 line-of-credit need	$\$75,000 \text{ minimum} - (\$141,314 + \$348,000 - \$490,643)$	\$76,329

Appendix B: Assessment Coverage Map

Course-Aligned Requirement	Location in Sample
Integrate operating and financial budgets.	Sales and Production Budgets; Resource Budgets; Cash Budget
Use accounting information to support a recommendation.	Budgeted Operating Results; Capital-Investment Evaluation
Evaluate financing and liquidity.	Cash Budget and Financing Plan
Recommend controls and accountability.	Control and Accountability Framework
Assess risk, ethics, and sensitivity.	Capital sensitivity; Risk and Ethical Considerations
Provide a complete implementation recommendation.	Integrated Recommendation; Implementation Roadmap