



CAPEX Investment Analysis for Optimising Investment Decisions in New Product Development Projects: A Case Study of TVS Motor Company

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Abstract:

Capital expenditure (CAPEX) investment decisions are important in New Product Development (NPD), where tooling and other project requirements can involve significant investment. This paper examines the use of CAPEX investment analysis to support investment planning and decision-making in an NPD environment at TVS Motor Company. The study is based on practical internship exposure under the NPD Finance function from 25 May 2026 to 7 August 2026. The analysis covered project and tooling costs, Bill of Materials (BOM), target cost, actual versus standard/target cost, contribution, per-unit cost, pricing, and investment evaluation using NPV, IRR, ARR and Payback Period. Historical project information was used as a reference for understanding cost patterns and current project requirements. An investment dashboard was developed to consolidate investment, cost, pricing and contribution information and improve visibility for project review. The case study indicates that combining historical data, structured CAPEX analysis, cost comparison and dashboard-based reporting can support more systematic investment planning and cost visibility in NPD projects. A second case examines product cost and contribution analysis using BOM, target cost, actual and standard costs, per-unit cost, pricing, GST, FOB and ex-showroom price information. The study demonstrates the practical role of Finance in converting project and cost information into decision-support insights.

Keywords: CAPEX investment, capital expenditure, New Product Development, tooling investment, target costing, contribution analysis, investment dashboard, historical data, TVS Motor Company

1. Introduction

Capital expenditure (CAPEX) represents expenditure on assets and investments that support an organisation's long-term operations and growth. In the automotive industry, CAPEX is particularly relevant to New Product Development because new products require investment in tooling and other project-related requirements. The Finance function therefore has an important role in analysing investment requirements, project costs and financial implications before and during project development.

The internship at TVS Motor Company was undertaken in the NPD Finance function from 25 May 2026 to 7 August 2026. The primary work area was CAPEX project investment analysis for tooling associated with an NPD project. The work included project and tooling cost analysis, BOM analysis, target costing, actual versus standard/target cost comparison, contribution and per-unit cost analysis, pricing analysis, and investment evaluation. Financial evaluation techniques included NPV, IRR, ARR and Payback Period, together with sensitivity analysis of key business-case assumptions.

A further part of the work involved using historical project information as a reference for current investment analysis. The investment dashboard brought together investment, project cost, contribution and pricing information in a structured format. The purpose of this paper is to present how these activities can be integrated to improve the visibility and analysis of CAPEX investment information and to document two practical case studies developed from the internship experience.

2. Literature Review and Conceptual Background

The internship report identifies CAPEX investment analysis as a finance activity that connects project investment requirements with cost, pricing, contribution and business-case information. The report describes CAPEX as expenditure intended to support long-term operations and growth and notes that tooling investment is an important requirement in automotive New Product Development. The financial-management references listed in the report provide the conceptual background for capital budgeting and investment evaluation [17–22], while the industry and company sources provide the context for the automotive and two-wheeler and three-wheeler sectors.

Historical data is presented in the report as a useful reference for understanding cost patterns, tooling requirements, target costs, contribution and investment trends [17–22]. Comparing historical project information with current project requirements can improve visibility into cost-related parameters. The report also links cost analysis with project and tooling costs, BOM analysis, target costing and actual versus standard/target cost comparison.

The report further explains that contribution and pricing analysis help in understanding the financial impact of a project. During the internship, contribution, per-unit cost, FOB, GST and ex-showroom price calculations were considered for EV and ICE business cases. Bringing these parameters together helps examine the relationship between cost, pricing, contribution and investment requirements.

The report also identifies dashboard-based analysis as a way to consolidate investment and financial information. The investment dashboard was developed to present investment, project cost, contribution, pricing and related information in a structured form. This approach reduced the need to review information from multiple sources separately and supported a clearer review of investment-related parameters.

The Finance function is therefore described in the report as contributing more than data preparation. It supports project cost analysis, tooling investment analysis, target costing, contribution analysis, pricing analysis and the presentation of investment information for project review. The practical experience documented in the report provides the basis for the case-based analysis presented in this paper.

3. Case and Methodology

This study is based on the author's Summer Internship Project at TVS Motor Company Limited, Hosur, Tamil Nadu. The internship was conducted on-site under the NPD Finance function from 25 May 2026 to 7 August 2026. The work focused on CAPEX project investment analysis for tooling investment related to New Product Development projects [9–14].

The approach is a practical case-based analysis derived from project work performed during the internship. The analysis used available project and historical information and focused on understanding cost and investment parameters rather than on a survey of respondents. The principal areas examined were project and tooling cost, BOM information, target cost, actual versus standard/target cost, contribution, per-unit cost, pricing and investment evaluation.

The financial techniques used or studied during the internship included NPV, IRR, ARR and Payback Period for investment evaluation, together with sensitivity analysis for changes in key business-case assumptions. Excel and SAP were used for financial and project information, while PowerPoint and Word supported presentation and documentation. The investment dashboard was used to consolidate and present key investment, cost, contribution and pricing information.

The internship activities progressed from understanding the NPD process and the role of Finance, through CAPEX and cost-centre information, project approval and business-case support, BOM and target-cost preparation, project cost analysis, contribution and per-unit cost analysis, investment evaluation, pricing and GST analysis, dashboard analysis, sensitivity analysis, and final consolidation of the CAPEX investment analysis. The study therefore reflects practical financial analysis performed in an organisational setting [9–14].

4. Results and Analysis

The internship analysis identified several interconnected areas that influence CAPEX investment decisions in NPD. First, project and tooling cost information must be considered together with BOM information to understand the cost structure of the end product. Target costing and actual versus standard/target cost comparison provide reference points for identifying cost differences and understanding project spending.

Second, historical project information can be used as a reference for current investment analysis. The report notes that past project information can provide visibility into cost patterns and investment requirements. Comparing historical information with current project requirements helps organise the analysis and supports review of investment-related parameters.

Third, contribution and pricing analysis provide a link between product economics and investment requirements. Per-unit cost, contribution, FOB, GST and ex-showroom pricing were considered in relevant EV and ICE business cases. The analysis demonstrates that cost and pricing information should be considered together when reviewing the financial implications of a new product.

Fourth, investment evaluation and sensitivity analysis add a decision-support dimension to CAPEX analysis. NPV, IRR, ARR and Payback Period were included among the investment evaluation techniques used during the internship. Sensitivity analysis was applied by changing key business-case assumptions to understand how changes could affect project outcomes and financial viability.

Finally, the investment dashboard consolidated important financial information into a structured view. The dashboard supported clearer review of investment, cost, pricing and contribution parameters and helped the Finance team examine the information more efficiently. The internship report identifies dashboard optimisation, data accuracy and Finance–NPD coordination as continuing areas requiring attention.

4.1. Industry and Company Issues Identified

- High investment requirements: NPD projects require significant investment in tooling and other assets, making CAPEX planning and investment analysis important.
- Changes in project costs: Fluctuations in tooling, material and other project costs can affect investment requirements and project cost structures.
- Pricing and contribution pressure: Competitive pricing needs to be considered alongside product cost and contribution.
- Different EV and ICE requirements: Different cost structures, pricing factors and technology requirements create additional complexity in investment and cost analysis.
- Historical data complexity: Project information from different sources needs accurate organisation and analysis to provide useful investment insights.
- Dashboard optimisation: Large amounts of investment, cost, pricing and contribution information need to be presented clearly and efficiently.

4.2. Strategies Identified from the Internship

- Strengthen CAPEX investment analysis by using historical project data to identify cost patterns and improve future CAPEX planning.
- Use Excel, SAP and investment dashboards to combine project, cost, pricing and contribution information.
- Regularly compare costs with standard and target costs to identify variations, improve cost control and support capital-use optimisation.
- Strengthen coordination between Finance and NPD so that project, tooling, cost and pricing information is available accurately and on time.
- Continuously improve dashboard layout, clarity and usability so that key financial information can be understood efficiently.
- Promote data-driven investment decisions by combining historical data, current project information, cost analysis and dashboard insights.

5. Case Study

5.1. Case Study 1: Optimising CAPEX Investment Decisions through Historical Data Analysis and Investment Dashboard

Background: TVS Motor Company operates in a competitive automotive industry in which New Product Development requires investment in tooling and other project-related requirements. The Finance function supports project-related decisions by analysing investment and financial information. During the internship under the NPD Finance function, the primary area of work was CAPEX project investment analysis related to tooling investment for an NPD project. The analysis involved project and tooling costs, BOM information, target costs, actual versus standard/target costs, contribution, per-unit costs, pricing information and other investment-related parameters.

Problem: The case involved multiple financial parameters that needed to be reviewed together. The report identifies five related issues: data complexity across tooling costs, BOM, target and actual costs, contribution and pricing; difficulty in organising historical information for comparison with current project requirements; the need to identify differences between actual, standard and target costs; the time required when investment information is spread across different sources; and the need to convert project and historical information into useful decision support for investment planning.

Analysis: Project and tooling cost information was analysed with BOM information to understand the cost structure of the end product. Target costing and actual versus standard/target cost comparison were considered. Available historical project information was reviewed to understand relevant cost patterns and provide a reference for current investment analysis. Contribution and per-unit cost analysis were considered with pricing information, including FOB, GST and ex-showroom pricing where relevant.

Solution and Strategy: The approach consisted of five main elements. First, historical project information was compared with current project requirements. Second, project and tooling cost information was organised with BOM, target cost, actual cost, standard cost, contribution and pricing information. Third, an investment dashboard was developed to consolidate project information. Fourth, actual costs were compared with standard and target costs to identify variations. Fifth, the dashboard and analysis were refined using review and feedback to improve clarity, usability and effectiveness.

Outcome: The approach improved the visibility of CAPEX investment information by allowing historical and current project data to be reviewed in a more structured manner. Cost, contribution, pricing and investment parameters could be considered together. The dashboard provided a more efficient way to review project financial information and

supported understanding of the factors affecting investment planning. The case also strengthened practical understanding of Finance's role in NPD, cost optimisation, investment planning and capital allocation.

5.2. Case Study 2: Product Cost and Contribution Analysis for New Product Development

Background: The second case focuses on product cost and contribution analysis within New Product Development. Before a new product is launched, the Finance function needs to understand expected cost structure, pricing, contribution and financial viability. During the internship, exposure was gained to BOM, target cost, actual and standard costs, per-unit cost, pricing, contribution, FOB, GST and ex-showroom price analysis.

Problem: The central problem was understanding the relationship between product cost, pricing and contribution when a new product contains multiple cost components. The report identifies product cost complexity, target cost management, the relationship between cost and pricing, contribution visibility and the need for structured decision support as key areas.

Analysis: BOM information was reviewed to understand the components contributing to overall product cost. Target cost was used as a reference against actual and standard costs. Per-unit cost was considered to relate product cost to pricing and contribution. Pricing information such as FOB and ex-showroom price was considered along with GST and relevant cost information.

Solution and Strategy: The case used structured BOM analysis, target-cost comparison, actual versus standard cost comparison, per-unit cost and contribution analysis, consolidation of financial information and sensitivity consideration. The report presents the relationship as: $\text{Selling Price per Unit} - \text{Variable Cost per Unit} = \text{Contribution per Unit}$. This provides a simple framework for examining how changes in cost or pricing can affect contribution.

Outcome: The analysis improved visibility of BOM and product cost components, target cost, actual versus standard cost, per-unit cost, pricing, FOB and ex-showroom pricing, GST considerations and contribution. It demonstrated how changes in product cost and pricing can affect contribution and the financial evaluation of an NPD project. The case strengthened practical understanding of target costing, cost control, contribution analysis, pricing and financial decision support.

6. Discussion

The two case studies show complementary aspects of NPD Finance. The first focuses on investment-level analysis: historical project information, tooling investment, CAPEX, cost comparison and dashboard-based investment review. The second focuses on product-level economics: BOM, target cost, per-unit cost, pricing and contribution. Together, they show how investment analysis and product cost analysis can be connected within the NPD process.

The internship report also highlights the importance of data organisation. Project information may involve multiple sources and several cost and pricing parameters. Using Excel and SAP for analysis and an investment dashboard for presentation can help organise these parameters. The report further notes that Finance–NPD coordination is important because timely and accurate project, cost, pricing and investment information supports the analysis.

The practical learning documented in the report indicates that historical data can support current project analysis, while structured cost comparison can improve cost visibility. Sensitivity analysis can be used to understand the effect of changes in key assumptions, and investment evaluation techniques such as NPV, IRR, ARR and Payback Period provide financial measures for project evaluation. The study is therefore centred on integrating these elements rather than treating each measure as an isolated calculation.

7. Conclusion

CAPEX investment analysis plays an important role in financial decision-making during New Product Development projects. Based on the internship experience at TVS Motor Company, effective analysis involves more than identifying

the initial investment requirement. It includes project and tooling cost analysis, BOM analysis, target costing, actual versus standard/target cost comparison, contribution, pricing, investment evaluation and sensitivity analysis.

The case studies demonstrate how historical project data and structured financial information can improve the visibility of investment and product-cost parameters. The investment dashboard provided a consolidated view of key information, while the product cost and contribution analysis connected BOM, target cost, pricing and contribution. These approaches support a more organised review of investment requirements and product economics.

The internship also provided practical exposure to the role of Finance in NPD and strengthened skills in Excel, SAP, financial analysis, dashboard preparation and reporting. Overall, the study concludes from the documented internship experience that combining historical data, structured CAPEX analysis, cost monitoring and dashboard-based reporting can support more informed investment planning and financial decision support in an automotive NPD environment.

8. Funding Details

No funding or grant details were specified in the source internship report.

9. Disclosure Statement

No financial disclosure statement was specified in the source internship report.

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