

Czech University of Life Sciences Prague

Faculty of Economics and Management

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**Diploma Thesis
Abstract**

**Case Study of Auto Part Assembly
in the Czech Republic**

Případová studie montáže autodílu v České republice

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1 Introduction

The automotive industry in the Czech Republic has a long-standing tradition that goes back for more than a century. At present it accounts for a quarter share of the total industrial production in the country. Several decades have passed since the Czech vehicle production counted hundreds of vehicles annually and these days vehicle manufacturers are recording production of more than million vehicles per year. The process of vehicle production is no longer performed by vehicle manufacturers only. This is due to the fact that the majority of required vehicle components are now manufactured by suppliers. The Czech Republic has advantages that make it the preferred country where many automotive firms choose to do their businesses. Some of the advantages are its location in Central Europe and its cheap labour force.

The research of this diploma thesis deals with a potential business opportunity that arises for a selected company that is in the position of a vehicle component supplier for a leading vehicle manufacturer in the Czech Republic.

2 Keywords

Automotive industry, assembly, car part, capital budgeting, payback period, net present value, internal rate of return, profitability, EBITDA, profitability ratio.

3 Objectives of thesis

This diploma thesis focuses on the automotive industry in the Czech Republic; specifically on a financial evaluation of a vehicle part assembling performed by a selected company (XYZ). The proposed vehicle part is a vehicle cockpit that is assembled by the company XYZ and the customer of the final vehicle component is Škoda Auto.

The first partial objective of the thesis is to evaluate the case study through capital budgeting techniques and profitability calculations. The second partial objective of the diploma thesis is a comparison of the generated results with the criteria of the applied techniques. The comparison will help to decide whether the proposed vehicle part assembly could be adopted or rejected by the supplier company XYZ.

The main research question of the diploma thesis is as follows: “*Based on the required initial investment, customer’s planned amount of production, customer’s time frame of production, the expected results should verify the profitability of the project*”.

4 Methodology

The research approaches that are applied in the theoretical part of the diploma thesis are deduction and induction. The methodological tools used for analytical research are capital budgeting techniques and profitability calculations. Capital budgeting approaches included commonly used techniques such as: payback period, net present value and internal rate of return. Other calculations such as estimated project’s annual cash flows, estimated initial investment, variable and fixed costs were performed as they are required to generate the final results.

The payback period was used to identify the project’s required length of time to recoup the initial investment. The net present value of the project’s cash flow was estimated and an NPV profile was used to graphically demonstrate the changes in NPV when different discount rates are used. The last capital budgeting technique, the internal rate of return determined the discount rate at which the NPV is equal zero. IRR projection was created and the IRR was calculated with the help of linear interpolation. Linear interpolation is a commonly used method in mathematics that calculates the distance between two known points.

Profitability calculations were used to reflect the project’s cost related to the assembly and measured the financial benefit. The selected indicators of the project’s financial performance were EBITDA and EBITDA margin ratio that measured the operating efficiency of the project. In order to determine the total expenses for the purposes of EBITDA calculation, three additional costs were calculated: lease cost, fixed cost and general and administrative cost. After this, all the expenses were deducted from revenue and the remaining result demonstrates the financial performance via EBITDA.

5 Main findings

Payback period of the proposed project is **4.32 years** (or 4 years and 3.8 months). In other words, in the fourth year of the project lifetime the project’s cash inflow will equal the initial investment.

Net present value generated by the project is **€1,479,783.43**. Since the obtained result is a positive value, the estimated earnings of the project (in present euro) exceeds the project's costs (in present euro).

Internal rate of return of the proposed project is **13.86%**. The value of the internal rate of return presents the discount rate that makes the *NPV* of all anticipated cash flows in the project equal to zero.

EBITDA was estimated at **€1,212,600**. The calculated result demonstrates the remaining revenue after the project's expenses are subtracted from the revenue excluding tax, interest, depreciation and amortization values.

EBITDA margin ratio generated by the project is **21.05%**. The obtained figure shows the margin that was left after all the manufacturing expenses, general and administrative expenses (*G&A*) were deducted. In other words, the *EBITDA* margin ratio reflects the operating efficiency, omitting noncash operating expenses such as depreciation and amortization.

6 Conclusion

Based on the result obtained with the *payback period*, the proposed project should be *adopted*, as the required length of time to recover the initial investment is shorter than the estimated project lifetime.

The most preferred capital budgeting criterion is the *net present value*. Since the net present value of the project is a positive value, the project should be also *accepted* according to this evaluation method.

The method that provides results in percentage values is the *internal rate of return*. The obtained results of the internal rate of return exceeded the firm's proposed requirements on the rate of return. Because the result is greater than the firm's required rate, the proposed project should be *accepted* by the firm's management.

Besides the capital budgeting techniques, the value of the proposed business was measured via the often used profitability indicator *EBITDA* and the profitability ratio *EBITDA margin* that reflects the operating efficiency. Acceptance or rejection of the project, based on both figures is mostly determined according to the firm's screening and preference decisions. Since the obtained results meet the acceptance criteria, the proposed case study of the cockpit assembly could be summarized as an *attractive business opportunity* for the company XYZ.

7 References

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