# Business Case

**Project:** PLCOpen-Editor (SWE I practice-based project 2020/2021, TINF19C)

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| Version | Date | Author | Comment |
|---------|------|--------|---------|
| 0.1 | 31.10.2020 | Franziska Kopp | Created |
| 0.2 | 04.11.2020 | Franziska Kopp | Changed some costs and adapted it to the calculation |
| 1.0 | 07.11.2020 | Franziska Kopp | Removed the calculation of earning power and the risk analysis and changed the structure of the document. |
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# 1. Introduction

The goal of the project is to implement a web version of the PLCOpen-Editor that supports the languages Sequential Function Chart and Function Block Diagram. It is supposed to be an easy tool to program a programmable logic controller without needing a lot of knowledge about the concrete syntax of the languages. Thereby for example a company can benefit, because it doesn't have to train the employees which results in a decrease of costs and time.

By planning a business case the suppliers can get aware of all costs and risks that might occur and in order of that they can find out if the project is profitable.

# 2. Working hours

In total each member of the project has a capacity of 180 hours. The distribution to the different work packages and members in table 1 follows from the data of the GANTT-Chart which is available via the following URL: https://github.com/elian15122000/TINF19C-PLCOpen-Editor/blob/master/PROJECT/PM/Gantt_chart.xlsx

| | Mouaz Tabboush (Project Manager) | Leonie de Santis (Product Manager) | Elian Yildirim (Programmer) | Franziska Kopp (Technical Editor) |
|---|---|---|---|---|
| **Documents** | 25 | 30 | 20 | 30 |
| **GitHub Organisation** | 5 | 10 | 15 | 10 |
| **Analysis** | 15 | 15 | 15 | 15 |
| **Design** | 10 | 10 | 10 | 10 |
| **Programming** | 40 | 40 | 45 | 40 |
| **Testing** | 35 | 35 | 35 | 35 |
| **Meetings** | 30 | 30 | 30 | 30 |
| **Project management** | 10 | 0 | 0 | 0 |
| **Presentation** | 10 | 10 | 10 | 10 |
| **Total (Stunden)** | 180 | 180 | 180 | 180 |

*Table 1: Estimated working hours*

# 3. Cost Calculation

## 3.1.     Fixed Costs

The members of the project are all working remotely from home so there is no rent for an office to pay. Merely the cost of power and for internet access will have to be paid. In the following table this is summarized under the term *additional costs*. For the project a sever was bought, so the costs for the server is 200,00€/month. Table 3 shows all the fixed costs summed up.

| Fixed costs | Price | Term/User | Total costs |
|---|---|---|---|
| **Additional costs** | 7,00€/month/user | 6 months/4 users | 168,00€ |
| **Server** | 200,00€/month | 6 months | 1.200,00€ |
| **Total** | | | **1.368,00€** |

*Table 2: Fixed costs*

## 3.2.     Variable Costs

The salary of each member is as follows:

| Role | Salary |
|---|---|
| Project Manager | 46,00€/h |
| Product Manger | 43,00€/h |
| Programmer | 42,00€/h |
| Technical Editor | 41,00€/h |

*Table 3: Salary*

The costs of the salary (Table 3) set off against the estimated working hours (Table 1) sum up to the following variable costs.

| Working package | Costs | % |
|---|---:|---:|
| Documents | 4.510,00€ | 15,15% |
| GitHub Organisation | 1.700,00€ | 5,71% |
| Analysis | 2.580,00€ | 8,67% |
| Design | 1.720,00€ | 5,78% |
| Programming | 7.090,00€ | 23,82% |
| Testing | 6.020,00€ | 20,23% |
| Meetings | 3.960,00€ | 13,31% |
| Project management | 460,00€ | 1,55% |
| Presentation | 1.720,00€ | 5,78% |
| **Total** | **29.760€** | **100,00%** |

*Table 4: Costs of the working packages*

### 3.3. Overall Costs

Adding the costs of the working packages to the fixed costs makes the following overall costs.

| Fixed costs | 1.368,00€ |
|---|---:|
| Variable Costs | 29.760,00€ |
| **Overall Costs** | **31.128,00€** |

*Table 5: Overall Costs*

# 4. Offer

According to the determined risks (see Risk Analysis in PM) and a desired profit of the project a margin of 20% is calculated. This leads to the following offer price:

31.128,00€ * 1,2 = **37.353,60€**