МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ  
РОССИЙСКОЙ ФЕДЕРАЦИИ

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**Отчет по лабораторной работе №4**

Дисциплина: «Project Management   
(Проектный менеджмент)»

Тема: **«Scalability»**

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**ЗАДАНИЕ**

Frequent situation when the customer persistently asks to reduce the price. Or, even worse, ask to cut the budget in the middle of project. For such cases, it is worth to put an offer "with an extra margin".

So imagine the situation. Suppose you have a project described in PM Lab1, and the customer requests to reduce the total development costs by half. For some reason, it is impossible to refuse. Reducing the quality of work by hiring cheaper, but less qualified professionals is also impossible. It is necessary to reduce the functionality, reduce the scale of the project.

Describe what reductions in the scale of your project will allow you to reduce initial budget in 2 (or around it) times.

**РЕШЕНИЕ**

In software development the factors that determine the scope of a project are determined by the following variables:

1. A set of functions that must be provided for user’s satisfaction;
2. Project resources;
3. Time.

Scalability

time

resources

deadline

Picture 1 – project scalability

Since we cannot reduce the quality of work and the qualifications of specialists, it is necessary to reduce the functionality of the developed system, which will lead to a reduction in the development time and, accordingly, a reduction in the cost of the project.

At the first, we can reduce the number of trading tools from 20 to 5-6, which will reduce the work of analysts and the Deep Learning Engineer at stages 1, 2 and 4.

The next step will be to abandon the mechanism of integration with the trading system, so the user will be able to use the service only for the purpose of obtaining market information and they will need to repeat operations themselves. This will reduce the development time of the server side.

The third step is to reduce the cost of mobile development. It is possible to abandon the development of an application for such an unpopular platform as Windows Phone, since this mobile platform takes up only 1.5% of the market, as well as the development of tablet versions of Android and IOS. This will reduce development and testing costs.

Recalculating:

First stage: research and analysis of tools indicators, collection of historical data of the auction, creation of a prototype neural network, its training.

Number of employees, skills: 2 employees, financial analyst and Deep Learning Engineer.

2 employees, 5 days/week, 2 weeks, 8 hours, $10/hour => 2 \* 5 \* 2 \* 8 \* 10 = $1600.

Second stage: improvement of the neural network model; creation of a prototype web application.

Number of employees, skills: 3 employees, financial analyst, Deep Learning Engineer, Software engineer

1 employee, 5 days/week, 2 weeks, 8 hours, $10/hour + 2 employees, 5 days/week, 1 weeks, 8 hours, $10/hour => 1 \* 5 \* 2 \* 8 \* 10 + 2 \* 5 \* 1 \* 8 \* 10 = $1600.

Third stage: creation of the Internet portal, creation of the mobile application.

Number of employees, skills: financial analyst, Software engineer, Mobile developer, QA

1 employee, 5 days/week, 2 weeks, 8 hours, $10/hour + 3 employees, 5 days/week, 5 weeks, 8 hours, $10/hour => 1 \* 5 \* 2 \* 8 \* 10 + 3 \* 5 \* 5 \* 8 \* 10 = $6800

Fourth stage: start, maintenance, refinement of the prediction model, testing.

Number of employees, skills: financial analyst, Software engineer, QA

3 employees, 2 days/week, 12 weeks, 4 hours, $10/hour => 3 \* 2 \* 12 \* 4 \* 10 = $2880

Total time duration: 5 months

Total budget: $12880

So we reduced the development cost by 44 percent.