WORK LOG 9

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Contents

1 架构量化分析

对主程序-子程序风格的软件架构进行 ROI(Return on Investment) 以及 Payback Period 分析。

1.1 ROI 实施过程

定性 IT 过程 ROI 的第一个阶段，就是执行一个改进的过程（不管是室内的还是室外的），并使全部的 IT 公司员工都能访问这个过程。第 2 个阶段，是识别并定性可评价的过程改进机会，这样就可以证实建立和公布该过程的相关利益。第 3 个阶段，就是应用公司事务更改管理技术，以克服人们的天然抗拒，以更改他们自己的行为。

其中第二阶段可以分为如下步骤:

- 识别可以有效评价和定性的过程改进的机会。
- 为每一次过程改进机会技术节省成本的设计一致性以及合理的公式。
- 减少这些计算到一定数量，这样使它们成为过程改进效果的底线 ROI。

1.2 *μVloger* ROI

Proposed Purchase uVloger Solution

Assumptions used in analysis

1. Fill in assumptions

Labour costs Wage including estimate of benefits

Position	Annual	Hourly
Manager	$ 60,000	$ 40
Assistant manager	$ 40,000	$ 31
Admin	$ 30,000	$ 19

Average annual revenue per customer

$ 300.00

Discount rate

0.06 Typically a range between 5% and 10%

图 **1:** Assumptions

Costs

2. Fill in your non-labour costs.

	one time cost	annual cost
Cost of the software		$ 8,000
Training costs	$ 2,000	
Maintenance costs		
Costs to migrate the data		
Other costs		

Describe any other costs that are not easily monetized

图 **2:** Costs

Benefits

4. Estimate the time the new systems will save, by position (relative to what you are doing now).

Select position from drop down	Describe task (e.g. sales, fundraising, admin, …etc.)	Estimate % saved (year)	
Manager	Sales	2%	$ 1,200.00
Admin	Invoicing	5%	$ 1,500.00
Admin	Accounting	5%	$ 1,500.00
Assistant manager	Sales	5%	$ 2,000.00

5. Estimate the increase in the # of customers per year

	# additional units
Increase in new customers	10
Increase in returning customers	5
Annual increase in funds raised (if applicable)	$ 1,000.00

图 **3:** Benefits

Return on Investment

Year	Costs	Benefits
1	$ 11,010	$ -
2	$ 8,000	$ 11,700
3	$ 8,000	$ 11,700
4	$ 8,000	$ 11,700
5	$ 8,000	$ 11,700
NPV	**$ 38,730.84**	**$ 40,541.74**

Return on investment
5%

Breakeven

Year	Investment	Gain
1	$ 11,010	$ -
2	$ 19,010	$ 11,700
3	$ 27,010	$ 23,400
4	$ 35,010	$ 35,100
5	$ 43,010	$ 46,800

图 **4:** ROI

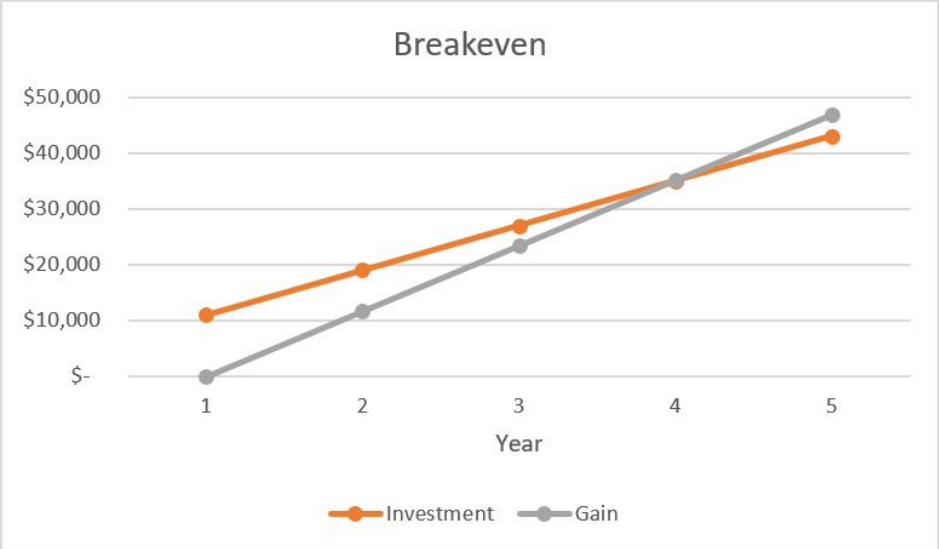

图 **5:** Breakeven

1.3 Payback Period 计算

是指一个项目的年净现金流入累计和等于初始净现金支出时所花费的时间。事实上，投资回收期解决了这样一个问题：资本项目需要多长时间来补偿或偿还初始投资?

如果每年的净现金流入是常量，那么投资回收期的计算公式为：

$$Payback\ Period = \frac{Initial\ Investment\ or\ Original\ Cost\ of\ the\ Asset}{Cash\ Inflows}$$

或者：

$$P = PYFR + \frac{BA}{CIYER}$$

其中：

- P = Payback period
- PYFR = Number of Years immediately preceding year of Final Recovery
- BA = Balance Amount to be recovered
- CIYFR = Cash inflow —Year of the Final Recovery

1.4 *μVloger* Payback Period

Investment	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Cash Flows	($1,000,000)	$500,000	$400,000	$300,000	$200,000	$100,000

Payback Period = ($1,000,000 - $900,000) / ($1,200,000 - $900,000) = 0.33

图 **6:** Payback Period