Effect of Software Manager, Programmer and Customer over Software Quality

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ABSTRACT

Several factors might be affecting the quality of software products. In this study we focus on three significant parameters: software manager, programmer and the customer. Our study demonstrates that the quality of product will improve by increasing the information generated by these three parameters. These parameters can be considered as triangular which the quality is its centroid. In this perspective, if the triangular be equilateral, then the optimum quality of the product will be achieved. In other words, to generate high quality software, the ability of software manager, programmer and customer must be same. Subsequently, only a manager or only an expert programmer, and with a software aware customer cannot be a guarantee to the high quality of the software products.

Keywords: Software products, software manager, programmer, customer

1. INTRODUCTION

One of the most important issues for producers is to provide quality in all products, that it is done in software product so it is more difficult than other products [1, 2].

The quality of software is important as well as other products which are produced by software engineers. View of Customer and Product buyers (software and Non-software) Product Quality Criterion in the selection of goods purchase [3]. In this study we have supposed to present effective factors providing the quality of software. In this study the quality of 6 projects with their purpose of selling products via internet has been measured. In this case, managers and programmers are divided into three levels: one, two and three that respectively, had experienced 3, 5 and more than 10 years. Besides Customers are divided into two levels that Customers Who have sufficient information about the software are located at Level 1 and the customers who do not have sufficient information are located at Level 2.

2. SOFTWARE

Before talking about this matter, it is needed to know a bit more about software. The IEEE standard defines the software as “A collection of programs that provide application”[4, 5]. Regardless of the variety software, being logical is the common feature in all of them. For a logical and abstraction product, Quality of provision is not easy. In addition to software features other factors such as manager, developer and the customer can have an impact on software quality. As Figure 1 shows, Parameters software Manager, programmer and customer factors that are effective in achieving quality. Figure 1 depicting an equilateral triangle in its center is the quality of software products.

3. SOFTWARE MANAGER

Existence of a good manager and strong management is a necessary prerequisite for producing a product [3]. Software engineers have less knowledge in the field of management and this is the main difficulty of software products [4]. The big problem in the production of software is lack of software management knowledge. The main reason is that software engineers do not read management courses during their education. Industry management is a branch of broad Management science. Due to the unique characteristics of software select of industry manager for management of software product...
does not seem to work in a measured. The biggest defect of an industry manager to manage a software product is that these managers have the lowest information about the software during the academic study. The above discussion is that management information of software engineer and software Information of industrial manager is not fully complete so able to manage software product so to solve this problem MBA and IT courses as the University may offer.

If management knowledge of software manager is less than the other two factors (i.e., customer and programmer) then the triangle in figure (1) is changed as figure (2) that the triangle is not equilateral triangle and the quality is not in the center of shape.

To determine the effect of manager on quality of software product the measurement was done, in this measuring, software managers are divided into three levels: one, two and three; their management experience respectively 3, 5 and more than 10 years.

![Software manager](image)

The effect of management has shown in table 1. As Table 1 shows, the lowest quality is related to a project 1 with a value of 62% and High quality is related to projects 4 with a value of 93%.

<table>
<thead>
<tr>
<th>Project name</th>
<th>Management level</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>%62</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>%82</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>%72</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>%93</td>
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<tr>
<td>5</td>
<td>1</td>
<td>%76</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>%83</td>
</tr>
</tbody>
</table>

According to the above table, management level is a main condition to increase software quality but not sufficient because Project 5 with management level 1 is a higher quality than project 2 with management level 2. Furthermore to the above parameters, other parameters can be effective in increasing the quality of software products they will continue to.

4. PROGRAMMER

One of the main pillars for the production of software is programmers. If programmers have the skills and knowledge of programming then can expect high quality product, this condition is necessary but not sufficient to produce a quality produce because programmer knowledge can not only lead to be the quality of the product [6]. In addition to skilled programmers, Produce a quality product depends on having efficient and informed the manager and the customer [7] [8]. According to Figure 1, to provide good quality product, programmer ability and customer and software manager ability must be the same. Figure 1 shows the effect of programmer skill and level of quality management on software quality. According to the graphs plotted, in a software product quality is increased when the programmer and manager have been at a high level of programming and management skills. In this diagram, programmers have been divided into three skill levels, at level one, two, three, respectively, programmers have been programming with 3, 5 and more than 10 years experience.

![Software Quality](image)

As figure (3) shows the quality of software produced is in association with programming skills and management level. For instance, software with programmers skill level 1 and management level 3 has been producing quality 78% whereas software with programming skill level 3 and management level 1 is 66% of quality. As the chart above shows having skilled programmers in project was not due
to the increased quality of software products; although the quality of software products can be increased. In this measured, the highest quality is reached when the programmer and manager is, at the highest level of abilities, in this measured its value is approximately 94%.

5. CUSTOMER

The third element in the production of software products and any other product is the customer or end-use [9]. The quality of software product will be increase if customers have a lot of information about a product that has a production order or purchase it [10]. Whatever, customer is accurate to software produced this is caused manager and programmer is meticulous to software products, intentionally or not [11, 12]. Of course, the customer expect from the software should ability of customer and programmer are same because product is not created or if created will not have the quality if the manager and the programmer fail to meet the customer demands.

Being unaware and indifferent the customer of software products made another reason is the declining quality of software products. Figure (4) shows effect of the customer on the quality of software products. Customers in these measurements are divided into two levels of knowledge and low knowledge.

According to figures obtained from the above three factors, we can figure it out that, manager role is more important than two others. It Means to achieve a quality software product depends on having highly experienced and capable managers. In addition to having a skilled programmer and informed customer having a knowledgeable manager of administrative affairs and software is criterion for producing high quality software. In this state, parameters form a parallelogram triangle so this product has been at the center of the triangle and software will be made very good quality.

6. CONCLUSION

In this essay among the different parameters that can affect the quality of software products has been investigated effect of three parameters, software manager, programmer and Customer. According to studies, skills and their information about the product they are built should be very close together. Having just a manager or software programmer and even customer who informed of the criteria cannot be a good guarantee for produced high-quality software.

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REFERENCES


