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CONTRIBUTIONS TO BOOKS

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

JOURNAL AND OTHER ARTICLES

- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

CONFERENCE PAPERS

- Garg, Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–23

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- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

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WEBSITES

- Garg, Bhavet (2011): Towards a New Gas Policy, Political Weekly, Viewed on January 01, 2012 <http://epw.in/user/viewabstract.jsp>

DEFECT ANALYSIS AND PRECLUSION USING QUALITY TOOLS: A CASE STUDY OF ABC COMPANY

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ABSTRACT

Quality is the heart of today's product and service. A customer is ready to pay high for best quality products while a high defect rate dissatisfied the customer and sometimes fling the company out of the market. Unfortunately it's not always easy to meet the industry and customer quality standards and makes the product hundred per cent defect free. However regular practices of quality tools help the company in early detection of defects and take timely corrective measures to minimize the defect count. The company needs to work continuously for the improvement in the work product to have satisfied customers and survive long run in the market. In this paper we have studied the e-Learning and application development project of ABC Company by means of DMAIC a data-driven quality strategy and quality tools namely Pareto Chart and Fishbone Diagram to identify the root causes of high defect count in the projects. The corrective measures are recommended and implemented in the project gray areas to minimize the defect rates in the process. The detection and prevention of defects using quality tools has shown that involvement of entire project team, and cautious continuous practice of quality tools help the company to achieve its target and lead towards progressive improvement in its work process.

KEYWORDS

DMAIC, defects, fishbone diagram, pareto chart, quality tools.

1. INTRODUCTION

For any customer, the key element they look for in the deliverable is 'its quality', which in layman's terms is 'the deliverable does what it is supposed to do and does not do what it is not supposed to do'. It should work correctly and accurately always without any errors / wrong results. Defects are anything that results in customer dissatisfaction.

In the IT world, new technologies bring along new challenges for the development team in terms of learning curve, new features, functionalities and tools usage. Due to this learning curve, more mistakes do happen impacting the deliverable quality. So, the objective of this project is to showcase a methodology which will help to speed up the learning curve for such new technologies which results in better quality products earlier in the lifecycle of the said technology. The company should make it a point to delight their customers by fulfilling their expectations. To help this cause, Six Sigma plays a very critical role as it lays a lot of emphasis on "Quality must become a part of the culture"

1.1 SIX SIGMA

The Six Sigma expert uses qualitative and quantitative techniques to drive process improvement. Although the tools, themselves, are not unique, the way they are applied and integrated as part of a system. Six Sigma professionals do not always agree as to exactly which tools constitute the set. Some of the statistical and graphical tools commonly used in improvement projects are listed below.

I. DEFINING A PROBLEM, IMPROVEMENT OPPORTUNITY, OR REQUIREMENTS

- Project charter to define the focus, scope, direction, and motivation for the improvement team
- Voice of the customer to understand feedback from current and future customers indicating offerings that satisfy, delight, and dissatisfy them
- Value stream map to provide an overview of an entire process, starting and finishing at the customer, and analyzing what is required to meet customer needs

II. MEASURING PROCESS PERFORMANCE

- Process map for recording the activities performed as part of a process
- Capability analysis to assess the ability of a process to meet specifications
- Pareto chart to analyze the frequency of problems or causes

III. ANALYZING PROCESSES TO DETERMINE ROOT CAUSES OF VARIATION, DEFECTS, OR POOR PERFORMANCE

- Root cause analysis to uncover causes
- Failure mode and effects analysis for identifying possible product, service, and process failures
- Multi-vari chart to detect different types of variation within a process

IV. IMPROVING PROCESS PERFORMANCE BY ADDRESSING ROOT CAUSES

Design of experiments (DOE) helps to solve problems from complex processes or systems where there are many factors influencing the outcome and where it is impossible to isolate one factor or variable from the others. Kaizen event to introduce rapid change by focusing on a narrow project and using the ideas and motivation of the people who do the work

V. CONTROLLING THE IMPROVED PROCESS AND FUTURE PERFORMANCE

Control plan to document what is needed to keep an improved process at its current level Statistical process control (SPC) for monitoring process behaviour 5S to create a workplace suited for visual control Mistake proofing (poka-yoke) to make errors impossible or immediately detectable. Additionally, Six Sigma team leaders often use project management tools such as Gantt charts and team engagement tools like brainstorming and nominal group technique.

1.2 SEVEN QUALITY TOOLS FOR CONTINUOUS QUALITY IMPROVEMENT

Quality is the demand of today's customer. They are ready to lose their pockets for getting an assured quality product. Best quality product stands alone in the highly competitive market and need no further marketing by the company, for example Apple company products. Quality is the core feature of any product or process that makes the product unique. To lead and beat the cut throat market competition the companies are required to continuously work towards quality improvement of its company products and processes.

To match the quality standards of the industry the quality engineers are relying over the fundamental seven quality control tools proposed by the Kaoru Ishikawa, professor of engineering at Tokyo University and the father of "quality circles". These have been described as the magnificent seven by Wadsworth et al. The Q-7 tools are summarised below as:-

- (i) Histograms
- (ii) Scatter diagram
- (iii) Stratification
- (iv) Pareto Analysis
- (v) Check-sheets
- (vi) Cause and Effect diagram
- (vii) Control charts

The above mentioned seven basic quality tools used by the organizations to provide information about problems in the organization assisting to derive solutions for the same. The detailed discussion of the seven basic quality tools in brief.

Histogram The development of histogram also termed as bar graph is attributed to a French statistician A.M. Guerry in 1833. It represents variation in sets of data through bar charts, thus demonstrating "distribution" in the level of variation. It is characterized by three constituents a centre (mean), a width (spread) and overall shape. Histogram is used for illustrating the frequency and the extent in the context of two variables. Histogram is a chart with columns. This represents the distribution by mean. If the histogram is normal, the graph takes the shape of a bell curve. If it is not normal, it may take different shapes based on the condition of the distribution. There are various types of histograms are possible and their interpretations (see table A1).

Scatter Diagrams The scatter diagram was developed so that intuitive and qualitative conclusions could be drawn about the paired data or variables. A scatter diagram is composed of a horizontal axis containing the measured values of one variable (*independent, i.e. cause*) and a vertical axis, representing the measurements of the other variable (*dependent, i.e. effect*). These diagrams provide a way to study the relationship of one variable with another which is useful for specific requirements such as product design, such as the percentage of an ingredient in an alloy, or the number of employees' errors and overtime worked. The resulting scatter diagram could, for example, provide useful information for material selection for design purpose. It is used as a part of investigation of relationships between variables, which is an important part of the quality management. So it is used under following circumstances as:

- (a) Validating "hunches" about a cause-and-effect relationship between types of variables.
- (b) Displaying the direction of the relationship (positive, negative etc.)
- (c) Displaying the strength of the relationship.

Stratification Interpreting data can be a creative process. There are always instances of data which seem to define a rational explanation. Office equipments which work perfectly well one day may not work at all, the next day. Often, a suitable stratification will be obvious to the people who have experience with a product, process and materials and situations. So, stratifications are a method of analysis of data by grouping it in different ways. The steps are as follows:

- (i) Collect data about any problem in product/detects, etc.
- (ii) Consider potentially significant way of significant way of grouping data (stratification) on basis of factors experienced.
- (iii) Repeat data through graphic manner reflecting stratification.
- (iv) Analyse results and try new grouping, if necessary, to get insight into the problem and make evident the correlation.

Pareto Analysis Pareto Analysis is named after Vilfredo Pareto -an Italian economist. It is a prioritization technique that identifies the most significant items among many. This technique implies that about 80% of the problems or effects are produced by about 20% of the causes. Pareto Chart is used analyse data relating to a problem in such a way as to highlight the most significant areas, inputs or issues. Pareto Analysis often reveals that a small number of failures are responsible for the bulk of quality costs, a phenomenon called the 'Pareto Principle.' This pattern is also called the '80/20' rule. A Pareto Chart is a series of bars whose heights reflect the frequency or impact of problems. The bars are arranged in descending order of height from left to right. This bar chart is used to separate the "vital few" from the "trivial many".

The procedure for performing a Pareto analysis consists of the following eight steps:

1. Define the activity or system of interest.
2. Define the specific risk-related factors of merit.
3. Sub-divide the activity or system for analysis.
4. Determine which elements of the activity or system lead to the problems of interest.
5. Collect and organize relevant risk data for elements of the activity or system.
6. Plot the data on Pareto charts.
7. Further subdivide the elements of the activity or system (if necessary).
8. Use the results in decision making.

ADVANTAGES OF PARETO ANALYSIS

1. Breaks a big problem down into smaller pieces.
2. Identifies the most significant factors.
3. Shows where to focus efforts & allows better use of limited resources.
4. Helps to separate the few major problems from the many possible problems.

Check-Sheets A Check sheet is an aid used in assembling and compiling data concerning a problem. It is used to collect data on a process in order to determine whether any unusual or unwanted elements are present. The functions of a Check sheet are Production process distribution check, Defective item check, Defect location check, Defect cause check. It is a tool for recording direct observations and helping to accumulate facts in the process. The data to be recorded can base on attributes (Go or no-go situations, binary classification like right or wrong, present or absent, i.e. discrete countable data.) or variables: (Data from measurement collectable on a continuous scale, e.g. diameter of a piston, tensile strength of a piece of rod, etc.)

According to the type of data to be collected, check sheets are designed. In-addition to a variable check sheet and attribute check sheet, there can be defect location sheet or measles chart. On a process flowchart or engineering drawing are marked errors, defects and problems. Accumulation of crosses or other marks on the document indicates as to where the major or most frequent occurring defects can be found.

Fishbone Diagram The fishbone diagram (see fig 1) is also known as a "cause and effect diagram." A fishbone diagram is a structured tool for brainstorming. This cause-and-effect diagram methodology is crafted to aid organizational teams identify potential causes for a described issue. Some people refer to this tool as Ishikawa diagram, named after its developer. The name fishbone originates from the diagram's fishbone appearance.

With a fishbone brainstorming approach, the session is conducted around categories of causes such as Methods, People, Machines, Equipment, Materials, Environment and Management. To start the process, the team should state the problem. This statement is then followed by brainstorming for root causes to the issue around the chosen categories.

After the team concurs on the problem statement, the question is placed at the head of the fishbone. The primary bones of the fish are composed of drawn lines connected to the statement of the problem. Each of the main bones in the fish addresses one of the chosen brainstorming categories. Items from the brainstorming session will be documented as lines connected to these main bones.

Control Charts The backbone of Statistical Process Control (SPC) is control charts, these were first proposed by Walter Shewhart in 1924. This gives a clear visual display that quickly tells when a process is "out of control". Control charts are important and display the result of statistical process control measures which depict whether product samples conform to specified limits or tolerances. A control chart displays a central horizontal line usually corresponds to the average value of the quality characteristics being measured. Two other horizontal lines represent the upper and lower control limits.

The mentioned 7-QC tools are in practice by the organization in order to enhance the efficiency. The staff should be trained during the orientation program about the implication of adaption of quality control tools.

2. PRACTICES OF DETECTION AND CORRECTION OF DEFECTS AT ABC COMPANY*

ABC Company offers innovative, efficient and customized solutions around curriculum and media development, assessments, engineering and big data. They exist to help their partners and customers understand, create and improve the learning process and the content, products, systems and data that shape and support it. ABC Company's exclusive commitment to the education industry has strengthened position as an intuitive, informed development partner for the industry's most cutting-edge solutions and has provided the platform to develop tools and processes precisely engineered for education.

2.1 SERVICE LINES OF ABC COMPANY

1. **Content Projects** Project deals with development of e-Learning courses for various high schools. This e-Learning course will help student to understand the topic better and will make studies interesting for them.
2. **Porting Projects** This is porting project i.e. porting from one LMS to other or converting an e-Learning course from FLASH to HTML 5. To match up with upgrading and new technology.
3. **Application Development Projects** These projects are building frameworks that map use cases, requirements and specifications to processes, technologies, and standards that integrate your systems and optimize your investments.

2.2 STATEMENT OF THE PROBLEM

A defect in work products hamper their quality and stop them from normal functioning. Therefore the scope of this paper is to identify the defects in the work product and minimize it.

Below are the steps for conducting defect prevention:

- (i) Identify the defects
- (ii) Categorize the defects e.g. Functional, Logical, GUI etc.
- (iii) Once categorization is completed create a Pareto chart.
- (iv) Pareto chart helps in understanding which 20% defects are causing 80% of problems.
- (v) Then after identifying those defects create a Fishbone diagram by doing brainstorming on it.
- (vi) Fishbone diagram will help us to understand the root cause of those defects.
- (vii) After doing the root cause analysis take actions to fix them.

2.3 METHODS

In this paper the two sample projects are considered namely E-Learning i.e. Content and another application development. i.e. Development. The defects of these projects are identified, analyzed and its causes will be identified.

To identify the defects and errors, the DMAIC a data-driven quality strategy is used to improve processes. The DMAIC is an integral part of a Six Sigma initiative, but in general can be implemented as a standalone quality improvement procedure or as part of other process improvement initiatives such as lean. DMAIC is an ellipsis for five interconnected phases named as Define, Measure, Analyze, Improve, and Control.

THE DMAIC METHODOLOGY APPROACH

a) Define

- The main objective of this stage is to outline the borders of the project.
- Stakeholders agree on the parameters that will define the project
- Scope and budgetary items, as well as customer needs, are aligned with project goals
- Team development takes place as the project begins to take shape

b) Measure

- The main objective is to collect data pertinent to the scope of the project.
- Leaders collect reliable baseline data to compare against future results
- Teams create a detailed map of all interrelated business processes to elucidate areas of possible performance enhancement

c) Analyze

- The main objective is to reveal the root cause of business inefficiencies.
- Analysis of data reveals areas where the implementation of change can provide the most effective results
- Groups discuss ways that the data underscores areas ripe for improvement

d) Improve

- The main objective at the end of this stage is to complete a test run of a change that is to be widely implemented.
- Teams and stakeholders devise methods to address the process deficiencies uncovered during the data analysis process
- Groups finalize and test a change that is aimed at mitigating the ineffective process
- Improvements are ongoing and include feedback analysis and stakeholder participation

e) Control

- The objective of the last stage of the methodology is to develop metrics that help leaders monitor and document continued success.
- Six Sigma strategies are adaptive and on-going.
- Adjustments can be made and new changes may be implemented as a result of the completion of this first cycle of the process.

At the end of the cycle, additional processes are either addressed or the initial project is completed.

2.4 PROJECT DESCRIPTION

The projects under study are content project and development project. The detail description of the projects is mentioned as follows.

a) Content Project:

- Company will update the design PPT as per the UI related changes that have been mentioned in the document.
- Company will share the updated design PPT with client for their review and approval.
- Company will implement the feedback received from client and will share the updated designs for approval.
- Company will create HTML5 mockups as per the designs approved by client.
- There would be a maximum of two rounds of review iterations from client.
- Client will provide "sample" content per each new template while creating the HTML mock-ups.
- HTML Mockups would be reviewed and approved by client team.
- Once the designs and HTML5 mockups gets approved by client team, Company would proceed with the development phase.
- Company to create ICE document with the sample content that will be provided by client for ICE Authoring.
- Client to review and approve the ICE document that will be shared by Company for ICE Authoring.

- Company will test all the HTML5 ICE templates on the browsers & devices mentioned in the section 3.3.1.1 of this document. Company would deliver the updated ICE templates to Client for review & approval after complete development & QA.

b) Development Project

- Convert the course from one LMS format to another
- Develop the course from Scratch from Manuscripts
- Create Test bank quizzes from Word/PDF/PPT files

2.5 METRICS

Metrics are parameters or measures of quantitative assessment used for measurement, comparison or to track performance or production. A performance metric is that which determines an organization's behaviour and performance. Performance metrics measure an organization's activities and performance. It should support a range of stakeholder needs from customers, shareholders to employees. Every organization should have SMART Metric goals i.e. specific, measurable, attainable, realistic, and timely.

2.6 GAPS IDENTIFIED IN THE PROJECT

Data of Content & Publishing projects are analyzed which has received quite a lot defects from client from past few months. Data is collected from the project and root cause analysis is done to find out the actual cause for the rise in defect count in past few months. This analysis is done with help of QC tools for deep & better understanding.

$$\text{Defect Density} = \frac{\text{Number of Defects}}{\text{Size}}$$

Few basic metrics set for the projects are defect density. Defect Density is the number of confirmed defects detected in software/component during a defined period of development/operation divided by the size of the software/component. The 'defects' are: confirmed and agreed upon (not just reported). Dropped defects are not counted.

At the start of the project we need to decide on target of defect density. The target is based on historical data i.e. passes project or it can also be an organization target. As the project progress the target may get change based on the results of the metrics. The target we have identified for the Content and Development project is based on organization target as 0.05 (0.05 means 5 defects per 100 assets/screens).

2.7 RESULTS- DEFECT ANALYSIS AND METRIC CALCULATION

Every organization strives to have lowest possible defects in its work process. To meet the target of six sigma 0.05 defects per unit is a great challenge for an organization. In this context the defect analysis of content project and development project of ABC company are discussed in detail as follows:

Target = 0.05

2.7.1 E-LEARNING PROJECT

Metrics calculation for Development project

During the metric calculation for Content Project, we found 100 numbers of defects in 1500 assets. The defect density is measured as 0.067 defects per unit. The defect percentage is higher than the target defect density i.e. 0.05 defects per unit.

No of defects found in project = 100 defects
 Size = 1500 Assets
 Defect density = 100/1500
Defect density = 0.067 defects/unit

The aim of the study is to bring down the defects as low as of Six Sigma standards 0.05 defects per unit. The result reveals that the defect density is not up to the set standards hence there is a need to identify why we were not able to meet our target through defect analysis. We have used Pareto chart to identify cause of defects. As per the Pareto chart analysis we have identified that Typo, Media, Formatting, content and functionality are the important causes of defects. Out of this typo, media and formatting are the major causes responsible for 80 per cent of the defects (see fig. 2) while content and functionality are responsible for 20 per cent defects in content project. The fishbone diagram (see fig 3) depicts that lack of thorough copy editing, missing of spell check function while review of MS Word Spell Check, inconsistencies of periods in bullets hamper the typo element of e-learning content. The incorrect tagging in storyboard and gap in understanding of specs are the causes resulted in media related issues in the e learning content of the company. The research also pointed out that the poor and shortened storyboard instructions are responsible for poor formatting of e-learning contents project under the study.

Action taken for Improvement in Content project

In the company we have taken certain necessary preventive actions in the gray areas to reduce rate of defects in the content project of the company (see table A2).

It is advised that to improve the typo related errors the company need to retrain the project team so that they should focus over the need of through PQS. Feedback, reinforcement of spell check with grammar checking and by redefining the standards for period inconsistency the project team can minimize the typo errors.

To improve the media of the content project, the company was informed to clear the understanding of tagging with Elsevier team. The image search for stock tagging was made horizontal. It was strongly recommended to avoid the use of white or transparent background and vertical images for stock images.

To improve the formatting errors, we have worked towards having clear understanding of H1 to H4 tagging. While publishing the content the team need to check the loopback ids, removed module numbers from storyboard template. The team should see that only one time template changes are done at the backend.

2.7.2 DEVELOPMENT PROJECT

Metrics calculation for Development project

During the metric calculation for Development project, we found 50 numbers of defects in 600 assets. The defect density is measured as 0.077 defects per unit. The defect percentage is higher than the target defect density i.e. 0.05 defects per unit.

No of defects found in project = 50 defects
 Size = 600 Assets
 Defect density = 50/600

Defect density = 0.077 defects/unit

To meet our objective to bring down the defects as low as to 0.05 defects per unit, we need to do defect analysis, to identify the root causes behind high defect rates. For finding the true causes of defect, the Pareto chart and fishbone diagram are used. As per the Pareto chart analysis we have identified that functional, lack of unit testing, logical, GUI/Front End, and unclear recruitments are the key causes of defects (see fig.4). It was found that functional, lack of unit testing and logical are the foremost causes accountable for 80 per cent of the defects (see fig.4) while GUI/Front End and unclear recruitments are responsible for only 20 per cent defects in content project. The fishbone diagram (see fig.5) depicts that lack of technical knowledge and new development team impede the functional aspect of development project under the study. The causes not able to trace the defects in unit testing, and having insufficient unit testing checklist are found responsible for lack of unit testing. The poor unit testing and ensure logic takes care of one off conditions are the causes behind the logical aspect of high defects in the development project of the company.

FIG. 2: RESULT OF CAUSES OF DEFECTS USING PARETO CHART FOR CONTENT PROJECT

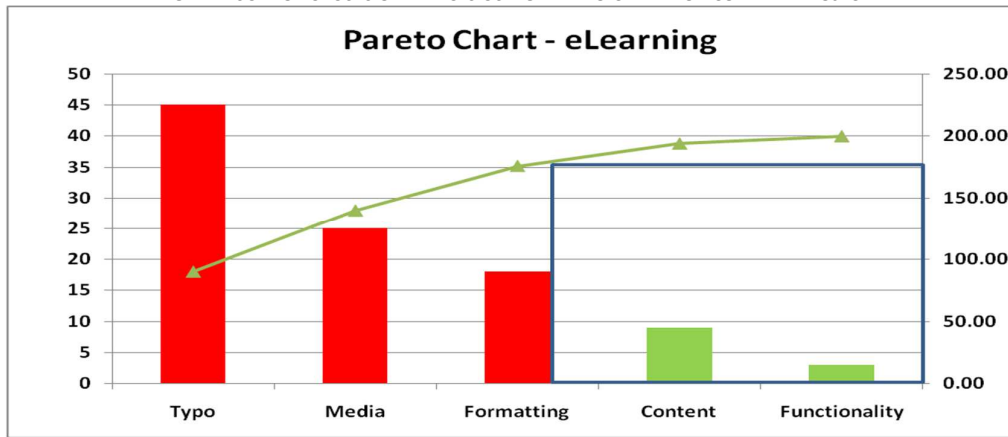


FIG. 3: RESULT OF CAUSES OF DEFECTS USING FISHBONE DIAGRAM FOR CONTENT PROJECT

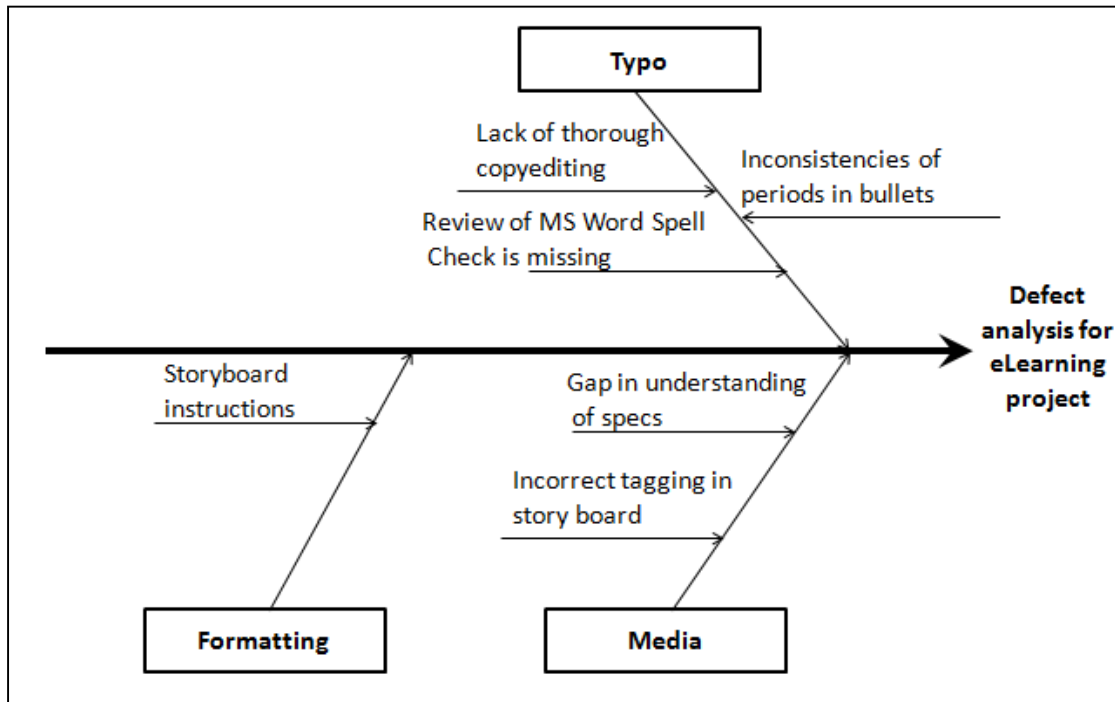


TABLE A 2: PREVENTIVE ACTION TAKEN FOR REDUCING DEFECTS CONTENT PROJECT

Sr. No.	Defect Type	Preventive Actions taken
1	Typo	Stressed on the need of thorough PQS (Retrained the team to do this) Feedback and refresher to copyeditors for GSP issues Reinforced spell check with grammar option Redefined standards for period inconsistencies
2	Media	Clear understanding of tagging with Elsevier team, Image search for stock tagging should be horizontal as the first priority, Avoid using white background and vertical images for stock images, Don't use transparent background for stock images, Media Guidelines updated with these specifications.
3	Formatting	Cleared understanding of H1 to H4 tagging, One time template changes done at the backend, While publishing check the loopback Ids, removed module numbers from storyboard template

FIG 4: RESULT OF CAUSES OF DEFECTS USING PARETO CHART FOR DEVELOPMENT PROJECT

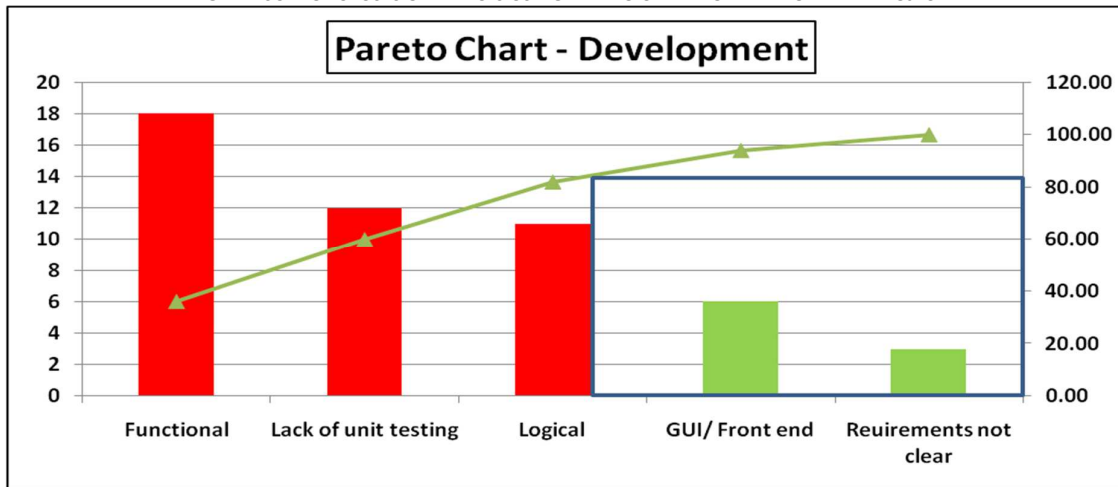


FIG. 5: RESULT OF CAUSES OF DEFECTS USING FISHBONE DIAGRAM FOR CONTENT PROJECT

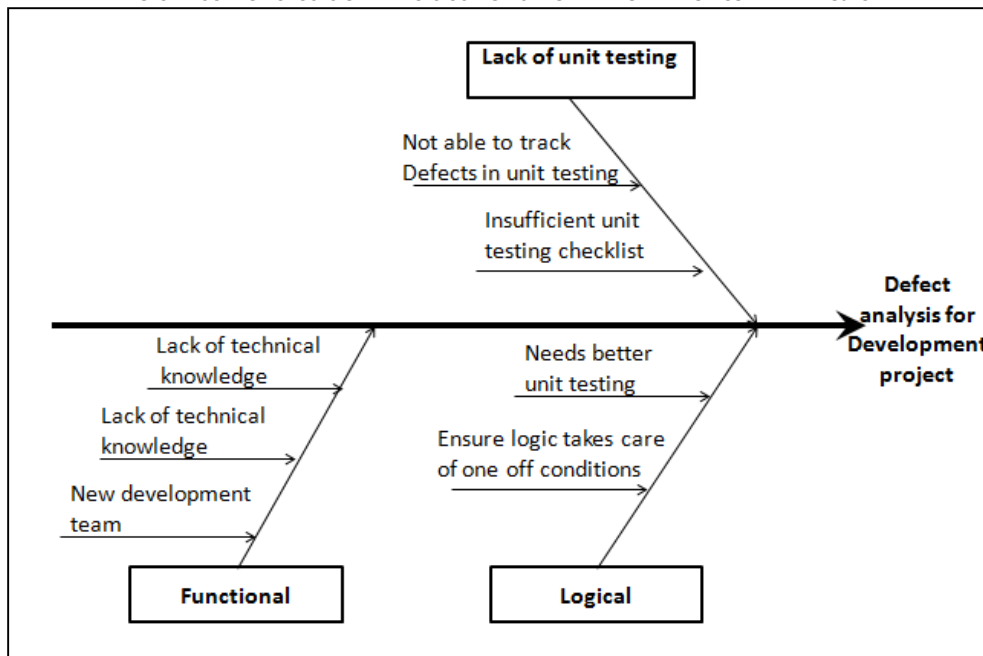


TABLE A 3: PREVENTIVE ACTION TAKEN FOR REDUCING DEFECTS IN DEVELOPMENT PROJECT

Sr. No.	Defect Type	Preventive Actions taken
1	Functional	Staff trainings will be conducted
2	Lack of unit testing	Checklist which is created for developers will be updated with necessary changes so that developers should not miss bug in unit testing.
3	Logical	Unit testing checklist and coding guidelines needs to be updated to take care of this.

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