Recommended Report Writing Template

Quarterly, Mid-Year and Annual Reports

❏ The following template represents a guideline for preparing a written committee report. Your report should be similar in organization and when at all possible should contain similar headings and subheadings.

❏ The template is derived from a review of the Six Sigma Certification Project Requirements for Reporting, and the National Committee for Quality Assurance (NCQA) Quality Improvement Activity (QIA) reporting formats.

❏ The italic text in this template is for instruction only and should not part of the actual report.

❏ Your report should be as specific as possible, including details and data that reflect the purpose.

❏ The information in your report should include a description of the project, measurement, etc., results, key points in the improvement process, and detailed support for your considerations and any recommendations/actions.

❏ The report should be prepared in serif typefaces, (e.g. Times New Roman and Garamond), font 11 or larger, no less than one-inch margins, single-spaced pages, including tables and figures. All pages with the exception of the title page must be numbered. A header located at the top right hand corner of each page with the name of the report is required in a font-size of 9.

Title Stating Subject and Purpose of Report

Submitted to:

Committee Name and/or Name of Person and Title as Appropriate

Prepared by:

Name, Title
Department/organization
Address (optional)

Date Submitted

NOTE: *Do not place a page number on the title page.*

Executive Summary

The Executive Summary contains the major information that the report contains. Many readers want only a broad understanding of the report and do not want a detailed understanding of the various aspects of report development and presentation. The Executive Summary allows readers to learn the main points of the report without reading the entire document to get an overview before focusing on report details. The Executive Summary states:

- *Problem/Measurement*
- *Scope*
- *Methods (if appropriate)*
- *Major results, including any support*
- *Conclusions*
- *Recommendations (if appropriate)*

Source: Six Sigma Black Belt Program

An Executive Summary is not used as an introduction to the report, but is a condensed miniature of the entire report. It generally has the following characteristics:

- *Length is usually 1-2 pages for reports less than 20 pages. To estimate how long an executive summary should be for reports over 20 pages estimate about 10% of the total length of the report. For example for a report that is 60 pages in length, the executive summary should be about 6 pages.*
- *It is recommended not to use terms, abbreviations or symbols unfamiliar to the reader without first defining terms and providing a complete spelling/description of all abbreviations and symbols. Usually definitions of unfamiliar terms are addressed in the introduction but the writer may also choose to use the executive summary for this also. For example, a report includes the use of the abbreviation PDCA as the quality improvement process methodology used. To appropriately cite PDCA the first time the abbreviation is used it must be completely spelled out i.e., Plan-Do-Check-Act (PDCA). Any other times it is referenced within your report you may use the abbreviation PDCA.*

1.0 Introduction

This section describes the purpose of the report. The purpose of the report presents information that enables readers to understand the subject, to make an affect on a reader's attitude toward the subject, or assist readers in carrying out a task such as making policy recommendations or developing an action plan to address identified opportunities for improvement.

The introduction is also the place to explain key terms that are used throughout the report. Other key aspects in an introduction include reporting the most significant findings contained within the report, providing the relevance of the report to the organization and the reader, announcing conclusions and describing the format of the report that follows.

2.0 Performance: The Measurement

- **Target Population** – *Discuss the population the total number included in the report (n = ???) and how the target population was identified. The discussion of the population should provide the reader with a complete description of who the population is and how they were identified. For example, describing any inclusion and exclusion criteria and providing an explanation of the numerator and denominator criteria is recommended.*
- **Measurement Period** – *Discuss whether the report contains baseline information or re-measurement comparisons and what the date ranges are for measurement. For example, a baseline six month report would be described as follows:*
  Example: The measurement period for this baseline report is January 1, 2004 to June 30, 2004.
- **Data Source(s)** – *Briefly discuss the data collected for the report.*
- **Measurement System Analysis –** *Discuss the validity of the measurement data either quantitatively or qualitatively. Identify and report strengths and limitations of the data collection method.*
- **Target Performance Levels** – *Identify any desired performance levels (goals and/or benchmarks) that have been developed for the measurement.*
  Example: 2004 Goal: Reduce Non-emergent ER visits by 10%

3.0 Data Analysis and Interpretation

- **Results** – *Describe and/or integrate visuals display results of the data collected. Examples of data display tools are flow charts, bar charts, histograms, Pareto charts, pie charts, run charts, and cause-and effect diagrams. Flow charts are highly recommended as a visual aid for process improvements as they allow other readers to comprehend the process basics. It is important here to be aware of your audience and select data display tools that best meet the interest and level of understanding of your reader(s).*

Examples

HISTOGRAMS AND BAR CHARTS

A histogram, the most commonly used frequency distribution tool, presents the measurement scale of values along its x-axis (broken into equal-sized intervals) and a frequency scale (as counts or percents) along the y-axis. Plotting the frequency of each interval reveals the pattern of the data showing its center and spread (including outliers) and whether there is symmetry or skew. A distinction must be made between histograms and bar charts. With a bar chart, the x-axis consists of discrete categories. Each bar is a separate group. [1]

When to Use:

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[1] Six Sigma Definitions. Available online www.healthcare.isixsigma.com

❑ *Use to show the data's distribution or spread.*
❑ *Use to show whether the data are symmetric or skewed.*
❑ *Use to show whether there are extreme data values.*

**Histogram**

Bar Chart
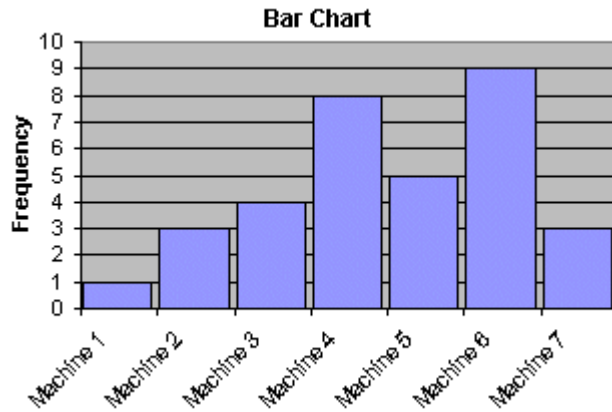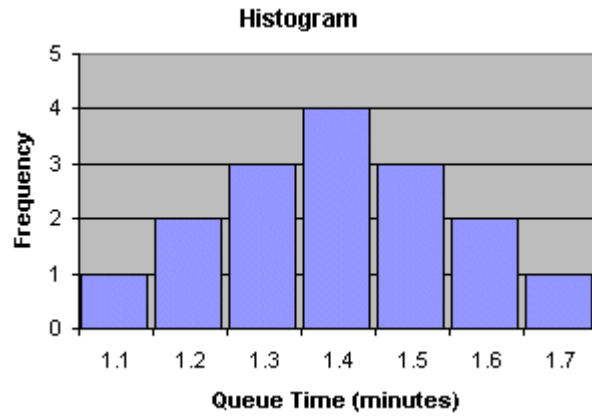
PARETO CHART

A pareto chart is used to graphically summarize and display the relative importance of the differences between groups of data. The tallest bar is the most frequent. The bars are always arranged in descending height. [2]

When to Use:

❑ *To identify the most frequent or most important factors contributing to cost, problems, etc.*

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[2] National Association of Healthcare Quality. 1998. Guide to Quality Management, Eight Edition.
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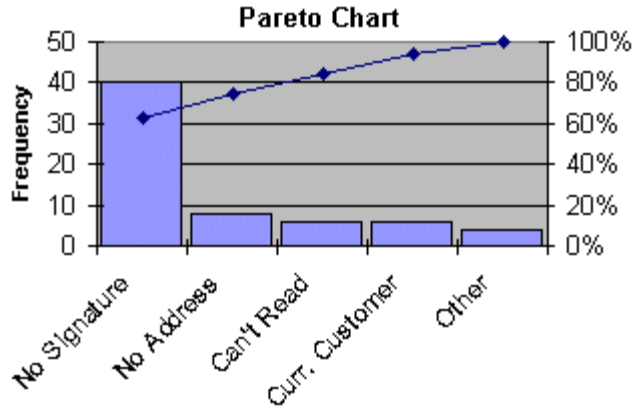
RUN CHART OR TREND CHART

Run charts are graphic displays of data points over time. Run charts (often known as line graphs outside the quality management field) display process performance over time. Upward and downward trends, cycles, and large aberrations may be spotted and investigated further. In a run chart, events, shown on the y axis, are graphed against a time period on the x axis.

When to Use:
❑   *To display variation.*
❑   *To detect the presence or absence of special causes.*
❑   *To observe the effects of a process improvement.*
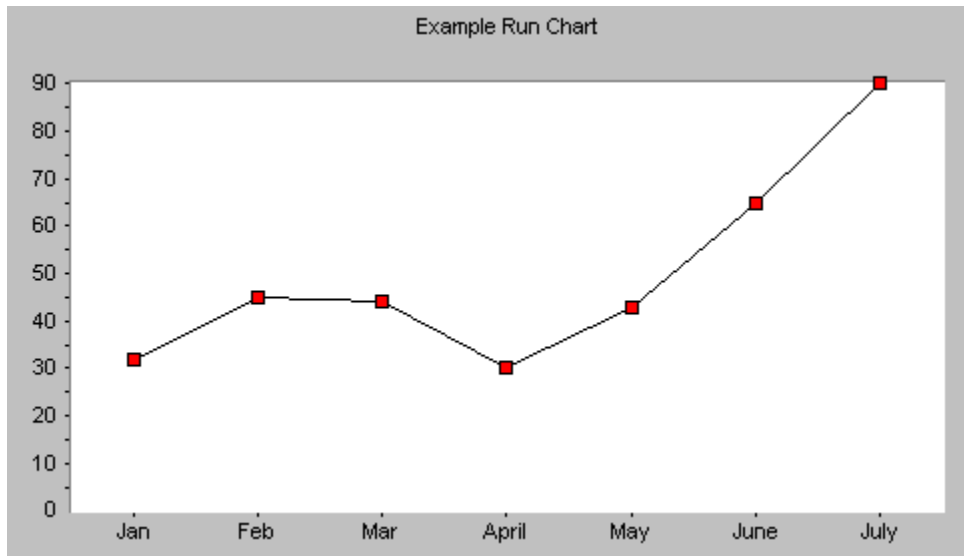

CONTROL CHARTS

Control charts are run charts to which control limits have been added above and below the center line (mean). These lines are calculated form the data and show the range of variation in the output of a process. Generally, the upper and

lower control limits are statistically determined by adding and subtracting three standard deviations to or from the mean.[3]

When to Use:

- ❑ *To distinguish variation from common and special causes.*
- ❑ *To assist with eliminating special causes.*
- ❑ *To observe effects of a process improvement.*
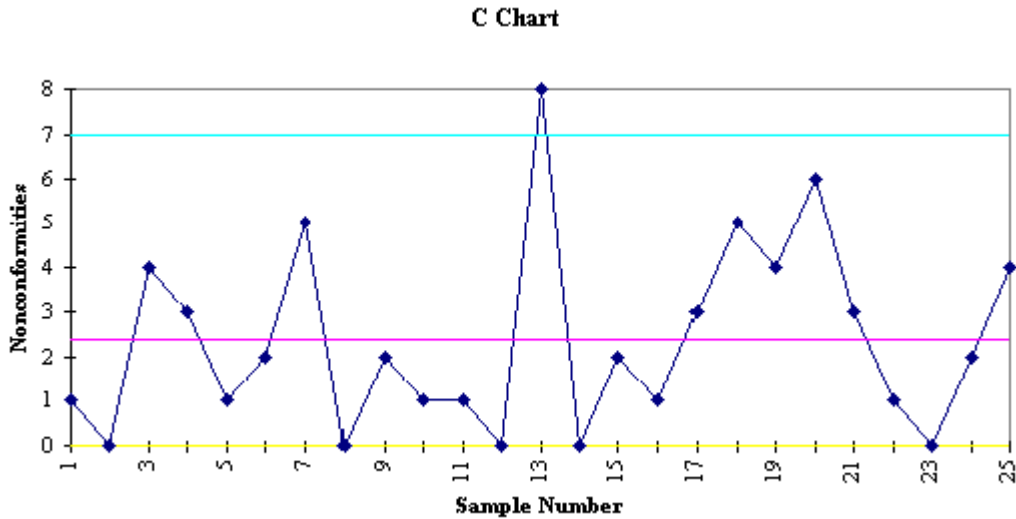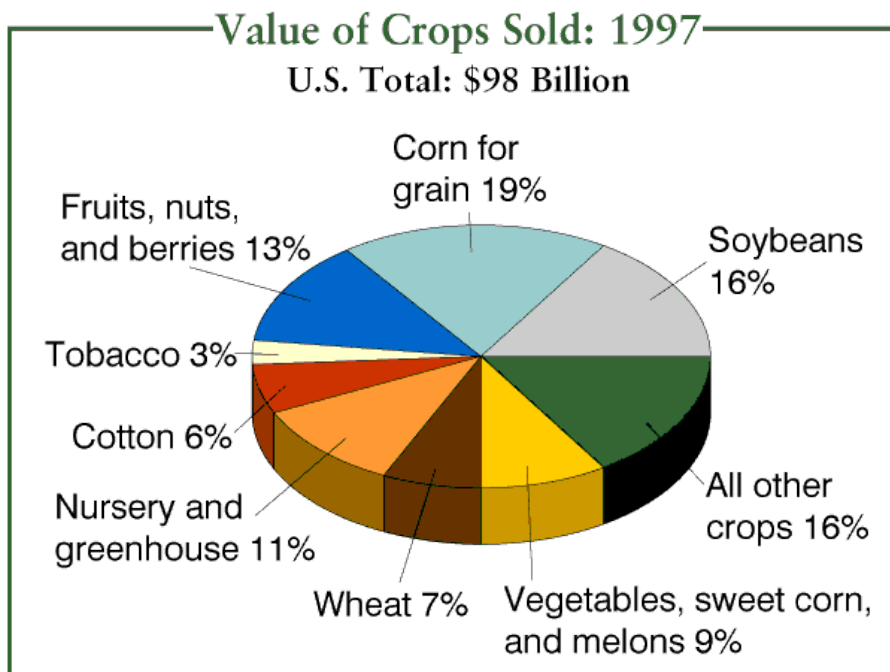
C Chart

PIE CHARTS

Pie charts compare the components of a set to each other and to the whole. Pie charts are a member of an entire family of proportional charts. The angle or the area of each slice (sometimes called a segment or wedge) is the same percent of the total circle as the data it represents.[4]

When to Use:

- ❑ *To show the percentages of data against the whole.*

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[3] Control charts as a tool in Statistical Quality Control. Available online:
http://deming.eng.clemson.edu/pub/tutorials/qctools/ccmain1.htm
[4] What are Charts and Graph? Available online http://www.usda.gov/nass/nasskids/pambio.htm
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Value of Crops Sold: 1997
U.S. Total: $98 Billion

- **Findings** – *Analyze current performance levels and identify gaps between current performance and target performance levels (goals and/or benchmarks), explaining possible sources of variations. Include visuals as appropriate and when analytical resource capacity is available to include stratification analysis, regression analysis, correlation analysis, statistical inference testing (e.g., t-tests), ANOVA, and a variety of statistical process control tools such as the control charts (see above for example), force field analysis and other as sampled above. Below is a brief definition of statistical terms most commonly used when analyzing findings of results.*

Stratification Analysis –determines the extent of the problem for relevant factors. The important stratification factors will vary with each problem, but most problems will have several factors. This analysis seeks to develop a pareto chart for the important factors. The differences identified can assist in identifying a root cause.

Regression Analysis - The goal of regression analysis is to determine the values of parameters for a function that cause the function to best fit a set of data observations that you provide. The purpose of regression analysis is to improve our ability to predict the next "real world" occurrence of our dependent variable. Regression analysis may be defined as the mathematical nature of the association between two variables. The association is determined in the form of a mathematical equation. Such an equation provides the ability to predict one variable on the basis of the knowledge of the other variable. The variable whose value is to be predicted is called the dependent variable. The variable about which knowledge is available or can be obtained is called the independent variable. In other words, the dependent variable is dependent upon the value of independent variables.

Correlation Analysis- Correlation analysis is the statistical tool that we can use to describe the degree to which one variable is linearly related to another. Frequently, correlation analysis is used in conjunction with regression analysis to measure how well the least squares line fits the data . Correlation analysis can also be used by itself, however, to measure the degree of association between two variables.

t-test- The t test employs the statistic (t) to test a given statistical hypothesis about the mean of a population (or about the means of two populations).

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ANOVA (ANalysis Of Variance) –This procedure employs the statistic (F) to test the statistical significance of the differences among the obtained MEANS of two or more random samples from a given population..

4.0 Conclusions and Recommendations

Briefly restate the major findings, the opportunities for improvement that have been identified, the recommendations proposed, and specify the criteria used for each recommendation chosen. Include a list of potential benefits to the recommendation(s) and actions to be taken, including responsible parties and schedule of completion.

APPENDICES

Include in the appendices any information that is too lengthy or bulky to present in the body of the report or additional information that may be of interest to a few readers only. Appendices are usually lettered not numbered (e.g. A, B, C) and are referred to within the body of the report as a means of directing the reader for review of the document if so desires.

Guidelines for Writing Reports

Be aware of who your intended audience is. Take into account their age, education level, general background, and knowledge of the subject. Documents should be written to the intended audience's knowledge level or below. Never write above the audience's level as you will immediately lose your readers.

Be sure the document is consistent throughout. This includes not only the use of the same fonts and font sizes throughout the document, but also that it reads as if it were written by one person.

Limit each paragraph to one topic.

Very structure and length of sentences however, prefer short, direct sentences.

Avoid passive voice and be consistent in tenses.

Use terms consistently.

Use visual cues to guide readers. Examples include:
- Bullets or numbers to list items
- Boldface to emphasize key points

Avoid slang or jargon. Slang or jargon is often misunderstood by people of different age groups, people of different educational levels, or people whose native language is other than English. Language other than good, formal English most likely will reflect negatively on the writers.
Keep illustrations as simple and self-explanatory as possible.

All visuals should be referenced in the text and clearly identify what the reader is supposed to observe or learn. Visuals, including figures, tables, and charts, should be included in the body of the report as close as possible to their reference and not referred to in an appendix, when at all possible. Tables should be labeled at the top and figures labeled at their bottom.

Make sure that all items that are shown in figures, block diagrams, graphs, etc. are clearly labeled. Do not leave it to the reader to guess what is meant. Also, carefully choose the type of visual that best gets your point across. Graphs generally are better than tables to engender a true understanding of a data set. There are advantages and disadvantages to each type of graph (bar, line, pie, etc.). The choice is dependent on what point you are trying to make. If there is any chance that the user may want to verify calculations, raw data is better than a graph. In this instance, consider providing both a graph and a table of data.

When referring to an increase or decrease of a percentage, do not use another percentage–it is always ambiguous and often just wrong. This is common when referring to a change in market penetration.
CORRECT: Emergency room visits declined five percentage points to 41% from 2002 to 2003.
ALSO CORRECT: Emergency room visits declined from 46% to 41% from 2002 to 2003.
INCORRECT: Emergency room visits declined 5%, to 41%, from 2002 to 2003. [This would indicate a change from 43.15% to 41%].

Cite all sources within the body of the report and include citation as footnotes or in a bibliography.

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