

# *Program Improvement Project Cost of Quality Studies*

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Unemployment Insurance Division  
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1992 Program Improvement Study

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## EXECUTIVE SUMMARY

In 1992 the Montana Unemployment Insurance Division continued the Quality Management program it began in 1988. One part of the program was to look at the services we provide to claimants and employers. Montana initiated studies that measure the cost of not performing quality service. These studies were called "cost of quality" studies. Cost of quality studies identify and measure areas of non-conformance and determine areas of rework that cost the division time and money. Cost of quality studies provide data to management that tells where problem areas exist and what they are costing the organization.

Cost of quality studies often identify problems that eventually show up on Quality Control as claimant errors. Many errors that are detected by Benefits Quality Control can be directly attributable to organizational difficulties. The studies also give us figures on costs of dollars to the organization to remedy errors due to either claimant error or organizational error to claimant accounts.

Montana was granted a waiver of 100 cases in FY 1991 to conduct cost of quality studies for our program improvement project. Additionally we started a draft on a manual explaining how to perform such studies. For FY 1992 we were again granted a waiver of 100 cases to finish our cost of quality project. In FY 1992 we completed four studies and produced a final copy of the manual "A Guide to Cost of Quality Studies: How to do your own".

Studies were conducted in both the Benefits Bureau and the Contributions Bureau. We have found that many benefit payment errors occur because of employer errors. For each area or process that was studied, the study team made a final report that included a dollar figure associated with non-conformance in that process, or "cost of quality"; a list of suggestions for the Bureau to study further, and a list of "hassles". Some reports contained recommendations for changes.

As a result of the entire project, which lasted two years, dozens of changes have been made in the way we operate. These changes result in savings to the UI Division.

Overall the cost of quality project was beneficial to the Montana UI Division. However, we did find them too limited in scope. In the beginning we concentrated upon deriving a dollar figure to know which processes to study in greater detail. As the year went on, it became apparent that a problem-solving approach was more valuable. The cost figures did give some hard data to the size of problems, but often these costs were misleading.

The studies involved almost every person in the UI Division. Almost half of them served

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on a study in some way. The knowledge and skills they learned from conducting studies has been invaluable. The cost of quality studies served as a reminder of UI's commitment to improving service to our customers.

The manual gives us a permanent record of our project. More than that, the sections on the various analytical tools will continue to be useful. The manual is one of several references being used a Problem-Solving class offered by UI.

The two year cost of quality project has changed the way the Montana Unemployment Insurance program looks at its services. The cost of quality project embodied all three parts of the Quality Works program Montana believes in and strives for: Customer focus, Continual Innovation and Total Employee Involvement, which includes both individual responsibility and teamwork.

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## Background/Problem Assessment

The Montana Unemployment Insurance Division embarked upon a Quality Management program in 1988. One of the first things we did was to look at the service we provide to claimants and employers. We initiated studies that measured the amount of cost attributed to providing quality service, and called them "cost of quality" studies. Cost of quality studies identify and measure areas of non-conformance and determine areas of rework that cost the division time and money. Identifying these areas tells management which areas are sources of problems. They identify key points in a process that need to be analyzed further. Studies target major error factors and causes of problems in the UI benefit payment system.

Cost of quality studies use a problem solving approach to analyze a process, identify problem areas, collect data on cost of non-conformance and suggest changes in order to provide quality service. Cost of quality studies primarily provide dollar figures reflecting the amount of non-conformance in a process. Cost of quality studies provide data to management that tells where problem areas exist and what they are costing the organization. Cost of quality studies are "attention getters" since they draw attention to problems.

Montana began conducting cost of quality studies in the Spring of 1990 after six months of research and brainstorming. A study team made up of analysts met with the Management to develop a list of areas that would be studied. This list was prioritized at the start, then re-prioritized every six months.

The original timeline on the project was a year. Management thought the initial phases of the project would be completed by that time. The studies took three times longer than anticipated. However, the studies provided valuable information to the Montana UI Division and they made the commitment to commit resources to continue them past the initial 9 months. Montana submitted a proposal to perform cost of quality studies as part of the program improvement study for FY 1991. The studies that were chosen found errors that eventually would show up in Quality Control in claimant errors. Many errors that show up in Quality Control can be directly attributable to organizational difficulties. The studies also give us figures on costs of dollars to the organization to remedy errors due to either claimant error or organizational error to claimant accounts.

In FY 1991 we completed five cost of quality projects. Additionally we produced a first draft of a manual "A Guide to Cost of Quality Studies: How to do your own". The manual was part of an effort to provide a guide to anyone conducting a study. At the time Montana started the studies, there were no written procedures to follow. There is a wealth of information on the various analytical tools, but they all took a different bent and were too much for each individual team to read. We put together a set of basic steps each cost of quality study follows, researched the material on the different tools, and produced a draft to

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follow. At the end of FY 1991 this was only a draft. During FY 1992 this manual was refined, put in final form, used by two study teams and then revised. The complete draft is now enclosed.

In FY 1992 we proposed completing the final four cost of quality studies as prioritized by management, as well as one study from the 1991 proposal. However, organization support for the studies declined considerably after the fall of 1991. The initial study teams identified costs only that were attributable to non-conformance in a project. Problem-solving methodology was not used and recommendations were not made. They did generate a list of suggestions, but follow-up was limited in scope. Management felt the studies needed a larger scope, with agreement from the study teams. Cost of quality studies changed their nature to some extent to accommodate a problem solving approach from the beginning. However, it became apparent that dollar figures do not provide the kind of information that is always needed, and are often misleading. In January of 1992 the UI Division made the decision to complete two final cost of quality studies and to redirect resources to move to systems analysis studies. Our first systems analysis study was performed in late Spring of 1992. Moving into systems analysis was another stepping stone in our quality management.

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## Study Goals and Objectives

The initial primary goal of the study was to determine the "costs" of non-conformance of various process in the UI system. Once these were determined, each process would then go through a systems study to streamline the process and alleviate problems. The processes with the largest "costs" would be first to undergo further study.

In order for the goal to be met, the project was broken into several steps. First the management team made a list of all areas that would be studied. After the list was complete they prioritized that list. Analysts from the Planning and Evaluation Bureau were put in charge of facilitating each study. For each study, members from the specific area being studied were then chosen by management to serve on the study team.

The Planning and Evaluation Bureau developed the methodology for conducting the studies. As each study progressed, the methodology changed to reflect the knowledge that was gained. Later, the methodology changed as a result of a change in the goal of the studies. Initially the primary goal had been to spend just a year performing these studies and to be able to pinpoint major areas of concern. After the dollar figure was known, each process would then undergo a problem solving study. However, the length of time drew on, and the division was no longer satisfied with having just the dollar figure. We needed to bring a problem-solving approach into the studies. The studies changed to reflect that change.

Beginning in 1991 we brought forth the idea of developing a manual outlining the methodology we used to perform the studies. This manual would be used within our division, as well as other divisions that were exploring the use of cost of quality studies. We began writing this manual in March of 1991 and had the beginning stages of the manual by September 1, 1991. In December of 1991 a final copy of the manual was completed. The manual was used by two cost of quality study teams in our division. Then it was revised and reprinted.

The UI Division is no longer conducting cost of quality studies. The manual does serve a useful purpose for our division. It serves as a permanent record of our experiences with cost of quality studies. It also provides a useful guide to analytical tools. The manual is being used in a Problem Solving class as one source of information.

Another goal that arose from the studies involved people. Almost every person in the division was involved in some form or another in cost of quality studies. Almost half of them served on study teams, and the other half were involved in the interviewing and flowcharting part of the study. Three things arose from these experiences. First of all, people became aware how exactly what they do fits into the larger scheme of a process. They became more aware of exactly how they do their own job. Thirdly, each person serving on the cost of quality study teams learned how to use at least some of the analytical

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tools. They each learned to approach processes and problems with a problem solving approach.

The UI Division did develop a list of costs associated with each process. We have used the information developed from the studies to initiate further study into many of the areas. All of the suggestions from the studies have been scrutinized by the specific Bureau, and dozens of changes have been made.

In December of 1991 the UI Division made a decision to change the scope of cost of quality studies. The cost figure that seemed important at the beginning was no longer needed. We felt we needed a larger scope put into the studies. Montana made the decision to move into systems analysis to complete the project. At the same time budget concerns forced us into an analysis of the appeals system. In Spring of 1992 we initiated a study of the entire appeals system. The objective was to completely analyze the system and to come back to management with history, current data, and possible recommendations for changing the system without affecting our service or delivery time. This was complete in August of 1992.

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## Study Approach and Data Collection

The UI Division developed a basic methodology for the first cost of quality studies. As each study was performed, we learned from our mistakes and refined the methodology. As mentioned above, the scope of the studies broadened after the first year because the original timeline on the studies expanded three-fold. Following is a brief list of the basic design used for cost of quality studies:

1. Management designates the area that will be studied.
2. Define the process that will be studied. Define where this process begins and where it ends.
3. Select a study team that includes two analysts and two people from the area involved in the study.
4. Flowchart the entire process from beginning to end. Do this by interviewing the people involved in the work.
5. Analyze the flowchart and all notes.
6. Examine all forms, letters, and computer programs that are used in the process.
7. Study team decides which areas need data on non-conformance costs.
8. Decide which collection method to use dependent upon the area. Collect data using various methods, using checksheets, time ladders, etc.
9. Test the collection method, then refine or redesign the collection method to ensure the data that is being collected is what is needed. The person doing the particular function records the data. The team collects non-conformance costs, then averages it out to a year. There is a possible bias from the person recording the data, but where possible, the figures were double-checked against historical data. The up side of this is that the person doing the job is the best to record what is actually happening.
10. Research current laws regarding the process.
11. Organize the data. Use charts and graphs if needed.
12. Make recommendations for further study.

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13. Make final report to management.

14. Set up an implementation team within the Bureau to follow-up on suggestions.

The following explains the background of and drafting of the manual on how to conduct cost of quality studies:

There was a changeover of the analyst conducting the program improvement studies in January of 1991. All the advance work on performing cost of quality studies had never been catalogued. There were no specific steps that teams had used, and in fact, the beginning studies proved to be a learning experience with UI refining the methodology with each one. The new analyst brought in yet another viewpoint. It became obvious that we needed to write a manual not only on how the cost of quality studies were being performed, but also to serve as a reminder of our experiences with the studies. Other states using such studies would benefit greatly from such a manual.

With this in mind, the manual was written with the viewpoint that anyone, regardless of analytical background could use the manual and put together a cost of quality study. The analyst taking over the project had many questions on cost of quality studies. She used her experience as a model for types of information people would need to know.

Another factor came into the writing of the manual. Each study had two analysts, but it also included people from the process that was being studied. Most of these people had no experience with studies or performing analytical work. With each study came a different group of people from the various bureaus. We developed the manual as a reference for people within our Division to read before they started the study, then to follow as they went through the studies.

To begin Montana defined the purpose of the book. This gave guidelines to the content of the manual. General categories were discussed. Then a general outline of the book was written. Organization of the manual was developed. The next step was to write the initial section on how to conduct the study. This section was followed by writing sections explaining the analytical tools. For each section the analyst researched a number of books and articles. Our purpose was to incorporate good ideas from each, and laying them out in a simple to read, step by step approach. After research a detailed outline of each section was written. After the section was completely written it was then read by other analysts and edited.

The systems analysis study was designed slightly different from the cost of quality studies. One of the main differences is that we were not out to collect cost figures, but merely to analyze the entire process and to come up with recommendations for changes

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## Analysis of Findings

The two cost of quality studies, Employer Refunds and Credits and Mail and Wage Reporting, both had final reports showing costs of non-conformance within each process. They also contained a list of suggestions for the Bureau to give to an implementation team for further study. The final reports submitted to management are attachments with this report.

Cost figures from the Employer Credit and Refund process were minimal, however, we found a system that needed to be streamlined and automated if possible. The report contained 10 suggestions to the Bureau outlining changes that could be made within the process, and a team from that section is studying the possible changes. The follow-up team has made specific recommendations to management to implement some of these suggestions.

The cost figures from the Mail and Wage Reporting cost of quality were quite high (\$15,724.80/year). These figures reflect the amount of yearly organizational cost largely due to misreporting of wages from employers. Along with cost figures this study team also generated a list of 23 suggestions to streamline the process and to reduce non-conformance costs.

The appeals study group came up with quite an extensive report. The report contained copies of all current laws, grid flowcharts, copies of forms and letters used, and data showing numbers of appeals and other historical data. The team then made a report recommending extensive changes in the process. The recommendations are contained in the appeals study report (see Attachment C). After completion of the study, management from the UI Division, Job Service Division, and Employment Relations Division met. This group recommended changes to the appeals process that we can expect to save all Divisions money and to bring better service to our employers and claimants.