

STATISTICS Newsletter[©]

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Incoming Chair's Message

by Beth Propst



What an exciting time to be Chair of the Statistics Division of ASQC!!! This may seem a little strange to many of you who are experiencing the effects of downsizing or austerity programs, who see your colleagues out of work and unable to find jobs as good as the ones they have left, or who feel threatened by the turbulence and rapid rate of change found in today's business world. So let me explain why I am excited. As ASQC begins its second half century, and the Statistics Division celebrates its seventeenth birthday, exciting new initiatives are under way. Now I've been excited by the Statistics Division ever since my first job as Newsletter Editor, but the activities at Quality Congress really heightened my sense of anticipation.

Let's begin with the ASQC initiatives. At Quality Congress, ASQC reported on a "Futures Project" that they had recently completed. In this project, the team members looked at the year 2010 in an attempt to answer the question "Where is Quality heading and how will the future impact ASQC, its members, and other users of Quality, both now and in the

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Outgoing Chair's Message

by Nancy Belunis



Thanks to all of you for the opportunity to serve as Statistics Division Chair. It has been a challenging and rewarding experience. I believe it has been a productive year for the Division as well.

We continued our efforts in several core activities; conferences, short courses, standards and the newsletter. The Publications committee had an inaugural meeting and is off to a good start with improving the How-To Series. The 3rd edition of the Glossary and Tables for Statistical Quality Control was published and is available through Quality Press. Thanks to **Jim**

Bossert for serving as editor of this publication. The Special Publication on Statistical Thinking replaced the Spring edition of the Newsletter. Kudos to the tactical planning team; **Roger Hoerl, Don Emerling, Lynne Hare, Galen Britz** and **Janice Shade**, for an excellent publication. Tactical plans are underway by the Education committee, Publications committee and Regional Councilors. Beth Propst provides more details on these in her message.

I leave the Division under the able leadership of the incoming officers. **Beth Propst**, Chair, has been active in the Division for many years. She has served as Newsletter Editor, Education Chair, Treasurer and Chair Elect. **Don**

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Editor's Corner

It was a pleasure speaking with everyone at the booth and in the hospitality suite during the AQC. As a result of our conversations, I have a better understanding of the topics and format desired by our customers. Although provided by a small percentage of members, it is important to communicate this information to the entire membership community. I'd like to hear from other readers on their thoughts.

Based on discussions, topics of interest include Sampling, Experimental Design, Multivariate Analysis, Response Surface and Interpretation of Data. Readers who would like to submit a Mini-Paper or Basic Tools article on one or more of the above topics, are encouraged to do so. As always, contributions on other subject matter will be greatly appreciated. (See below for criteria for Basic Tools and Mini-Paper Columns.)

The desired format, based on conversations and feedback at the booth, identifies a discussion or tutorial approach to the proper application of a statistical tool, as opposed to derivations and theory. Readers want to be able to take the knowledge obtained from the articles and apply within their own environment.

Feedback regarding the Special Publication on "Statistical Thinking" was very positive. For anyone still interested in purchasing either additional copies of the Special Publication and/or the presentation given at the 1995 AQC, contact the QIC group at ASQC. As a result of the positive response, the authors will conduct a session entitled, "How to Effectively Implement Statistical Thinking in Your Organization" at the 40th Annual Fall Technical Conference. (See centerfold for details.)

Janice

Criteria for Basic Tools and Mini-Paper Columns

Basic Tools

Purpose: To inform/teach the "quality practitioner" about useful techniques that can be easily understood, applied and explained to others.

Criteria:

1. Application oriented/not theory
2. Non-technical in nature
3. Techniques that can be understood and applied by non-statisticians.
4. Approximately three to five pages or less in length (8 1/2" x 11" typewritten, single spaced.)
5. Should be presented in "how to use it" fashion.
6. Should include applicable examples.

Possible Topics:

New SPC techniques
Graphical techniques
Statistical thinking principles
"Rehash" established methods

Mini-Paper

Purpose: To provide insight into application-oriented techniques of significant value to quality professionals.

Criteria:

1. Application oriented.
2. More technical than Basic Tools, but contains no mathematical derivations.
3. Focus is on insight into why a technique is of value.
4. Approximately six to eight pages or less in length (8 1/2" x 11" typewritten, single spaced.)
Longer articles may be submitted and published in two parts.
5. Not overly controversial.
6. Should include applicable examples.

General Information

Authors should have a conceptual understanding of the topic and should be willing to answer questions relating to the article through the newsletter.

Authors do not have to be members of the Statistics Division.

Submissions may be made at any time to the Statistics Division Newsletter Editor. All articles will be reviewed. The editor reserves discretionary right in determination of which articles are published.

Acceptance of articles does not imply any agreement that a given article will be published.

VISION

- Our customers' needs will be continuously anticipated and met.
- Our members will be proud to be a part of the Division.
- Our Division's operations will be a model for other organizations.
- We will be a widely influential authority on scientific approaches to quality and productivity improvement.

MISSION

- Promote statistical thinking for quality and productivity improvement.
- Serve ASQC, business, industry, academia and government as a resource for effective use of statistical methods for quality and productivity improvement.
- Provide a focal point within ASQC for problem-driven development and effective use of new statistical methods.
- Support the growth and development of Division members.

STRATEGY

- Our primary customers are Statistics Division members. Other key customers are:
 - Management,
 - Users and potential users of statistical methods for quality and productivity improvement,
 - Educators of the above customers.
- Our orientation to customers is customer focused.
- Our markets, within which we intend to offer products, are weighted as follows: greatest weight on intermediate statistical methods, nearly as much weight on basic methods, and much less weight on advanced methods.
- Our primary products are educational services.

PRINCIPLES

- Focus on a few key things.
- Balance short-term and long-term efforts.
- Recognize that we exist for our customers.
- Value diversity (including geographical and occupational) of our membership.
- Be proactive.
- View statistics from the broad view of quality management.
- Apply statistical thinking ourselves (that is, practice what we preach).
- Uphold professional ethics
- Continuously improve

INCOMING CHAIR'S MESSAGE

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future?" They developed four possible scenarios describing the world in the year 2010. Based on these scenarios they developed some important actions to begin in 1996. The team expects the knowledge gained as a result of this project to indicate strategic directions for ASQC in the coming years. They also suggested actions that can be taken by organizations and individuals. (If you would like to receive a copy of the report that was given out at Quality Congress, call ASQC and ask for Item B0697). I suspect we will soon be reading about this in Quality Progress and other places. We can all use this information to be better prepared for the future.

Another exciting initiative that has been under way for several years and is gaining momentum is the Transformations to Quality Organizations Program (TQO). TQO is managed by the National Science Foundation with support from ASQC and others. They fund projects in order to develop a research base that will push the boundaries of our understanding regarding what it takes to be a world-class organization. These projects require partnerships between academic researchers and other organizations, including business, industry, and the public sector. The projects range from the global—"The Role of Business and Strategic Planning in the Implementation and Development of Total Quality Management"—to the very specific—"Multi-Faceted Investigations of the Concrete Pipe Industry." Currently, twenty five projects are funded. Some may be completed within the next year, but most are longer term (the modal project length is 36 months). In order to share information as soon as possible, many of the researchers that were funded in 1994-1995 (the first year funding was available) are presenting at conferences such as AQC. Look for TQO talks at your local conferences.

Of course, the most exciting things going on are the activities of the Statistics Division. The task force on Statistical Thinking (the same folks who brought us last year's AQC presentation and this year's Special Publication which you all received in place of the Spring issue of the newsletter) is forging ahead under the capable leadership of Roger Hoerl. They will be conducting a tutorial at the Fall Technical Conference in October which has a two-fold purpose: first to educate people about Statistical Thinking and second to demonstrate how to educate others about Statistical Thinking. After that, they intend to publish (possibly as a How-To booklet) material that you or your colleagues can use to teach Statistical Thinking in your companies, sections, or communities. For those of you who are not already aware of this, some material is already available through the Quality Information Center (QIC). If you wish to receive extra copies of the Statistical Thinking Special Publication or a diskette containing a Powerpoint slide show on Statistical Thinking, they are available at a nominal cost from the QIC.

The tactical plan on Integrating Statistical Thinking into Curricula at All Levels has taken a sharp right turn. We decided that the scope of the original tactical plan was too large—more like a strategy. It also was difficult to execute, given the geographical diversity of our volunteers. So we created a tactic. Its name—until we find a better one—is the Statistical Thinking Virtual Academy. Chris Ayers—Education Chair and leader of this tactical plan—will fill you in on the details elsewhere in this newsletter, so I won't steal any of his thunder here, except to point out that this tactical plan is an example of the impact of technology on us all. It would not have been possible two years ago, and many of us would not have been interested a year ago. Technology—especially information technology—is going to have a huge impact on our lives, both personal and professional, in the next ten to fifteen years. (This

was one of the conclusions of the ASQC Futures Project.) It is important to adapt our thinking and our tactics (maybe even strategies) as technology impacts our customers and our ability to deliver.

Another effort which will be proceeding on the technology front is the investigation into a Statistics Division home page. Currently, Mark Kiel, our Bulletin Board administrator, is spearheading this effort. He plans to have the Division on-line by this fall. Possibilities in this direction include having some or all of the newsletter available on the web site. Any thoughts you have about this can be directed to Mark at markhk5409@aol.com.

Another ongoing initiative involves redefining the role of the Regional Councilor. In accordance with the new by-laws, we are now allowed to have as many or as few Regional Councilors as we wish. Before appointing any new Regional Councilors we are rethinking this role. Our desire is to make this position more powerful and to foster true liaisons with sections. This may mean that we have some Councilors who are assigned to work with single sections. This effort will continue under the auspices of the new Membership Chair.

Our new Publications Chair, Don Strickert, is putting together his committee and has developed a Tactical Plan for them to follow. Quality Congress was Don's first official appearance as Publications Chair, and he jumped right in. Don has a lot of energy, and the beginnings of a good committee in the How-To Editors Bob Brill and Walter Liggett. He still has more positions to fill—see article elsewhere in this newsletter—but this committee has some amazing possibilities.

What all of these initiatives mean is that the Statistics Division is actively pursuing new ways to reach and serve our members and other customers. We know that most of you do not come to Quality Congress or the Fall

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Letters to the Editor

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Technical Conference. We know that many of you don't even attend section meetings regularly—possible because of cost and travel issues. So we need to be innovative about ways to deliver products and services to you. I think this is exciting.

Of course, I'm also excited about the great people I will get to work with as Division Chair. I have mentioned a number of them already, but there is a cast of thousands remaining. First and foremost, there is that excellent team consisting of my fellow officers: Don Emerling (Chair-Elect), Don Williams (Treasurer), and Bob Mitchell (Secretary). No longer an officer, but still very much a force in the Division is Past Chair, Nancy Belunis, who has done a terrific job as Chair and in all the positions before. Nancy and I have worked well together in the past, and I will continue to rely on her advice and expertise as she fulfills her duties as Past Chair. Then there are all the other committee chairs and volunteers too numerous to mention, including those who have not volunteered yet. Also, as Chair, I get to interact very closely with officers of other Divisions and lots of people at ASQC. Last but not least, there are all the Division members I will come in contact with during the coming year. Truly a superb cast of thousands.

Now you know why I am excited to be chairing the Statistics Division in the coming year. I hope that you can be a little excited by some of the initiatives taking place as well. I also hope that if you are excited, you get involved. That was one of the action recommended by the Futures Project team. Get involved—in your organization, your society, your community. Being involved can mean a phone call, a letter, an e-mail message, or volunteering for some activity. As always, I look forward to hearing from and seeing you over the coming year.

Dear Ms. Shade:

I am writing to ask if you would please have a copy of the Special Publication, Spring 1996, entitled "Statistical Thinking" sent to.....

I would send my own copy to him except that I don't want to part with it! It is the best collection of thoughts on Statistical Thinking that I have seen. Indeed, I intend to write to the authors and compliment them on what they have produced.

I also might mention that I enjoy reading the regular issues of the division's newsletter. I thank you for undertaking the job of editing it. As a former editor (of Industrial Quality Control and the Journal of Quality Technology) I know full well that the ratio of thanks-for-the-output to inputted-work is quite small.

Lloyd Nelson

Thanks, Lloyd. I'm glad you enjoyed reading the Publication as much as we enjoyed putting it together! As for volunteering as the editor, I have to admit although it does require dedication, working with everyone these past eight months has been very rewarding!

Fall Technical Conference Scholarships

The Statistics Division of the American Society for Quality Control is offering 5 grants to cover the cost of registration, meals (up to \$50) and lodging for students who wish to attend the Fall Technical Conference (FTC) that is sponsored jointly with ASQC's Chemical and Process Industries Division and the Section on Physical and Engineering Sciences of the American Statistical Association. This year's FTC will be held at the Radisson Resort, Thursday and Friday, October 24 and 25 in Scottsdale, Arizona.

Grants are available for currently enrolled undergraduate and graduate students of statistics and quality management. Travel costs are not covered. Recipients may be asked to serve as

Dear Ms. Shade:

I just finished going through the Spring '96 issue of your special newsletter on "Statistical Thinking" and found it extremely informative and interesting. My sincere congratulations on an outstanding job. I have been a member of Statistics Division for quite some time, however, this newsletter is the first that a non-statistician like me found useful. Please keep up the good work. I look forward to seeing more and more simple and yet powerful issues of Statistics Division Newsletters.

Pradip V. Mehta, P.E., CQA
Chief Quality Audit & Inspection Br.
Quality Assurance

Thank you for the feedback. You know, statistics can be fun!!! I have a request for readers who have either a formalized education in statistics, or a position where statistics is readily used. Share your knowledge, learnings, hurdles and successes with our other readers, either in a mini-paper or a basic tool.

room monitors for a session at the conference and will be required to write a brief article about their conference experience for the Statistics Division Newsletter.

Applicants should send a letter of interest, together with a letter of recommendation from a major professor, by August 1, to:

Lynne B. Hare
Chief, Statistical Engineering
Division
Building 820, Room 353
National Institute of Standards and
Technology
Gaithersburg, MD 20899

Notifications will be mailed by September 1.

OUTGOING CHAIR'S MESSAGE

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Emerling, Chair Elect, has served as Education Chair and Treasurer. **Don Williams**, Treasurer, served as Treasurer during the past year and previously served as Certification Chair. **Bob Mitchell**, Secretary, has been Membership Chair for six years assuming the added role of Regional Councilor Coordinator for the past year. All of the officers have participated in the Division's long-range and tactical planning meetings for numerous years.

I would like to also recognize some of the other people who have been responsible for the Division's activities this year. We had several new Council members this year. These people include **Janice Shade**, Newsletter Editor; **Don Strickert**, Publications Committee Chair; **Bob Brill** and **Walter Liggett**, How-To Series Editors; **Nick Martino**, Certification Chair; **Lynne Hare**, Awards Chair; **Joe Voelkel**, ASA Q&P Liaison; and **Mark Kiel**, Bulletin Board Administrator. Also, several people continued in their positions for the year. These people include **Chris Ayers**, Education Chair; **Steve Bailey**, Hunter Award Chair; **Ed Schilling**, Standards Chair; and **Bob Perry**, Examining Committee Chair. There are exciting new initiatives in many of these areas that I believe will benefit our members in the coming years.

Several people served in positions for the year organizing our conferences and short courses. **Lori Coons** was responsible for organizing the Statistics Division session at the Annual Quality Congress as well as serving as a technical paper reviewer. The session entitled "In Search of the Future: Models and Methods for Whole Systems Change" was presented by Tom Swails to a standing room only crowd. **Joe Conklin**, **Mike Morrow**, **Glenn Hutchens**, **Frank Kaminsky** and **Bob Dovich** served

as technical paper reviewers on behalf of the Division for the AQC. **Carol Meeter** served as AQC Short Course Chair. The short course on Statistical Thinking for Business Improvement was presented by Andy Kirsch and was well received. **Frank Alt** continued in his role as our representative for the Annual Conference on Applied Statistics. **Jacob Van Bowen** is serving in a two-year slot as the Fall Technical Conference program representative. **Nick Martino** was responsible for organizing the short courses for the FTC.

Regional Councilors, **Joe Troxell** and **Oz Godsey**, retired from their position this year. Thanks for their service to the Division. Our remaining **Regional Councilors** are working on redefining their role to better serve the sections. Thanks for their commitment to the Division as we work on this tactical plan.

Special thanks to **Rick Lewis**, Past Chair, who provided me with moral support and coaching. For the second year, the Division earned the highest level of the McDermond Division Management Recognition Program under Rick's leadership. We anticipate that the Division will qualify for level 3 again for the 1995-1996 year.

Finally, I would like to thank Past Chairs **Lynne Hare** and **Steve Bailey** who got me to "volunteer" with the Division. Working with the Division has been a wonderful opportunity to broaden my horizons. We continue to need individuals to volunteer their time and energy to Division projects. If you want to become involved with the Division, please complete the member interest form in the Newsletter. I think you will find it a rewarding experience.

FTC Meetings

As usual, the Statistics Division will be holding several meetings at this year's Fall Technical Conference. Our Council meeting will be on Wednesday evening, Oct. 23, from 7:30 to 9:30 PM. Any one who is interested is welcome to attend. Just drop in, whenever you can.

On Saturday, Oct. 26, we will be holding our Tactical Planning meeting from 8:00 AM to 5:00 PM. Tactical Planning meetings are held twice a year—once at AQC and once at FTC. In these meetings, we lay the groundwork for activities that will occur in the intervening months on our tactical plans and other key initiatives. They last for one day—a very intense day of planning and break-out groups. All Council members, Past Chairs, and members of tactical planning teams (such as the Statistical Thinking Virtual Academy) are invited. All other persons interested in attending this day long meeting are cordially invited, but these participants are requested to do the following:

1. Plan to begin at 8:00 AM and stay for a significant portion of the meeting and break-out groups. The type and intensity of work done during these sessions is too easily disrupted if people continually come and go.
2. Contact one of the officers about your attendance prior to the meeting. There are two reasons for this. The first is obvious—to plan for food, room size, etc. The second is less obvious, but more important. We like to prepare first-time attendees to these meetings by sending them some material and having discussions about our tactical planning process and what to expect at this meeting. This allows new people to begin contributing almost immediately.

So ... if you have a desire to participate in the future of the Division, feel free to contact one of the officers to find out the details. Fresh viewpoints are always welcome. Besides, can you think of a better excuse for going to Scottsdale in October?

Mini Paper

A PRIMER FOR ENUMERATIVE VS. ANALYTIC STUDIES: USING CAUTION IN STATISTICAL INFERENCES

Eileen J. Beachell and Marilyn Monda*

Preamble: Statistical Inferences

In 1986, I attended a six-week class on “Enumerative and Analytical Studies” presented by Dr. W. E. Deming. Although my formal education in statistics and my applications of statistics in industry were well formed by then, Dr. Deming presented a different perspective. He presented an issue that was unknown to me; the controversy on statistical tests of hypotheses and the limitation of statistical inferences. I had many years to reflect, argue, debate, and finally understand thanks to Dr. Deming’s tutoring.

In April 1990, the seed of this paper was formed after attending (again) Dr. Deming’s four-day seminar in Cincinnati. It occurred to Marilyn and me that there needed to be more discussion of this topic. We wanted to present what we had discovered through our own experiences based on the theory of knowledge from Dr. Deming.

In the summer of 1990, Dr. Deming edited the paper with me. He was very excited and wanted it presented at his yearly conference in New York. We decided the timing was too soon for us. However, I believe the time is right to begin a dialogue within the ASQC membership on this topic. For some members, this entire topic will be new and will take some thought to understand the distinction between the two types of studies. For other members, this may be a chance to revisit and consider another perspective.

Eileen J. Beachell

Introduction

Increasing numbers of businesses are becoming convinced that quality in manufacturing is a key ingredient in successful global competition, increased returns to stockholders, product improvement, and increased productivity. When this conviction leads to action, it often results in the use of statistical methods, including industrial statistics such as tests of hypotheses and design of experiments. Due to the increase in the use of statistical methods, particularly design of experiments, in quality improvement, questions have been asked regarding the validity of statistical inferences drawn from these applications.

Dr. W. E. Deming (1) warns against the use of statistical methods for prediction in numerous papers and lectures:

“If statisticians understood a system, and if they understood some theory and knowledge and something about psychology, they could no longer teach tests of significance, test of hypothesis, chi square... Statistical theory, used cautiously, with the help of the theory of knowledge, can be useful in the interpretation of the results of tests and experiments.”

Examples are presented to illustrate when the industrial user of statistics should apply and interpret statistical results with conviction, caution, or not at all.

Enumerative and Analytic Studies

Critical to understanding the applications of statistical analyses in industry is the distinction between an enumerative study and an analytic study. An enumerative study is an analysis collected on data from a study on a limited group or frame. A decision will be made to accept or reject (to buy or not buy) or to act on the group or frame studied.

An Example of an Enumerative Study

A new supplier has sent a batch of parts to a plant. The manager must decide to accept (to buy) or reject (not buy) this single shipment of parts (the material). She has specifications for the diameter of these parts and she cannot spend time measuring every part. In this example statistical sampling and analyses are used correctly to study the shipment (the material). Sample statistics—e.g., comparing a sample of randomly selected parts to the blueprint tolerances for process location and spread—will allow the manager to make a decision about whether to buy the entire shipment.

Most parametric statistics require the use of a random sample of the material to describe the shipment in a valid manner. This example meets this important assumption. Therefore, most statistical analyses will allow for prediction of material characteristics from the sample. The sample could be used to predict and analyze the distribution of the material, conduct a capability study or calculate confidence intervals on the mean and variance. The statistical inferences made on the material(or frame) will help to make a decision on whether to accept the shipment or reject it.

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The Analytic Study

An analytic study is an analysis aimed at answering questions about future material not yet made. The analytic study is not interested in making a decision on the shipment but on the supplier. In the analytic study, a decision will be made on the cause system generating the material.

An Example of an Analytic Study

Continuing the part example, suppose that this time the manager must decide whether to accept the new supplier as a source. She still has the specifications and the random sample of parts from the one shipment of parts (the material) to help make her decision. It is the manager's plan to use the statistics from the sample to predict the supplier's parts over many shipments (the universe or the system). If the sample passes statistical evaluations comparing its location and spread to the blueprint specifications she plans to accept the supplier as a source. Although this may seem like a legitimate use of the sample, this strategy can lead to non-valid statistical results. In other words, the conclusion drawn from the sample statistics may not be confirmed when future shipments of the part are examined. In fact, it is often inappropriate to use enumerative statistics to answer analytic questions.

In the enumerative study the manager was able to use statistics calculated from the sample to describe the material because the sample represented that material (Recall, the sample was randomly drawn from the material it was to describe.) Similarly, to use the same sample to answer questions about future material we must have reason to believe that our random sample represents all of the supplier's future shipments. If we do not have convincing evidence of this, then sample statistics such as t-tests, ANOVA, and distributional analysis cannot predict the part diameters in the future.

Key Differences Between Enumerative and Analytic Studies.

Table 1 defines the key considerations made for each type of study.

TABLE 1. Differences between Enumerative and Analytic Studies

ENUMERATIVE	ANALYTIC
Interest is in studying the group (material) the samples were taken from.	A prediction will be made about the process that produces the material.
No predictions are made about future materials.	A decision will be made to change or not change the process that will produce the material in the future
The sample was chosen randomly from the material.	Special members were chosen for the sample.
A decision will be made only on the material studied.	The process will be worked on.
Most statistical analyses are valid for inferences on the material under study.	Statistical methods of inferences (DOE, t-tests, etc.) are not meaningful for prediction. If the conditions of the study are repeatable in the future, then statistical inference may be valid.
No decision will be made based on the process that generated the material studied.	Document the statistical control of the variables.

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Dr. Deming stated that knowledge is the key information needed for analytic studies over enumerative studies¹. This knowledge may come from control charts or from an expert in the subject-matter who can look at the data analysis on the frame and try to determine future events. The expert in the subject-matter should determine if the study conducted under one set of conditions gives any credence under other, future conditions. A control chart can assist in this assessment. If the variable of interest is in a state of statistical control over many conditions the expert may infer that the material sampled today will represent material made tomorrow. It is important to recognize that the validity of an enumerative study aimed at answering analytic questions can never be known until we can study the variable of interest under many conditions. The correct number of conditions that must be studied before the validity of the study is known is also decided by experts in the subject matter.

Examples of Applications of Enumerative Statistics in Analytic Studies

1. A division manager wishes to increase the yield of one of his manufacturing processes. The process is sensitive to ambient temperature and humidity. These conditions cannot be manipulated and are, seasonally, in a stable state of control. An experiment is conducted. The results suggest that the process yield will be best if certain critical process variables are set at recommended targets. The results of this experiment may only be valid under the original temperature and humidity conditions. In fact, Dr. Deming states that "The exact environmental conditions for any experiment will never be seen again." ²

For this application this means that if the experiment is conducted in the spring, its results may not be valid in the summer, fall, or winter. Future prediction of the process yields might be verified if the temperature and humidity conditions were statistically stable throughout all seasons at the original experimental levels.

2. A company purchases a new gauge to evaluate a critical process variable on the production floor. The quality manager assesses the measurement variation and stability of the gauge in a climate-controlled environment using a standard short term gage study. The variation of the gauge when used on the production floor in ambient condition will most likely be quite different from that seen in the controlled study.

A control chart will be necessary to assess the measurement device under the majority of conditions that it will experience day-to-day. This analytic study could not predict future measurement variation using confidence intervals, t-tests, or other statistical tests. Given the knowledge from the controlled study, a metrologist (subject matter-expert) could be asked to help predict the behavior of the gage under all (unstudied) conditions that the company might expect in the future (i.e., temperature range (40 degrees Fahrenheit to 110 degrees Fahrenheit) or humidity (50% to 100%)).

3. The operator on injection molder no. 3 has been recording a control chart on the weights of the pieces coming off on his shift. The weight chart is showing many special causes and the process engineers cannot identify the sources. An experiment is conducted to identify the special causes.

There is no justification from the statistics that the special causes identified in the experiment will effect the process in the future. It could be misleading to apply the experimental results gleaned from a sample effected by a special cause to a future, hopefully stable process. The design of experiment is solely an enumerative study. No valid statistical inferences can be made. Any information gathered from this experiment must be evaluated and confirmed by experts in the subject matter and additional studies should be performed to confirm results as the process becomes stable.

4. A design engineer is evaluating a new component. She runs some statistical tests to compare the first group of working components to the blueprint specifications.

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The use of these early experiments as conclusive information would be premature. The results could reflect the special conditions under which the prototypes were produced. The sources of variation seen in the prototype lab could be completely different from those sources of variation effecting the production line. Any information gathered from this experiment must be evaluated by the design engineer and confirmed by additional studies as the part goes into production.

5. A statistical facilitator has determined the thickness of a plate coating is in a state of statistical control, but with an unacceptable level of variation. An experiment was conducted in order to assess the causes of that common cause variation. Statistical information, even when the underlying variable is statistically stable, should never be considered without the insight of a subject matter expert.

Changes which reduce variation in one variable could increase variation on another. The statistical facilitator verifies the rationale of the results with the design and process engineers before recommending or implementing any changes aimed at reducing thickness variability.

Summary/Conclusions

The examples provided in this paper were aimed at assisting the industrial user who wishes to apply enumerative statistical analyses to analytic questions.

Table 2 summarizes the Issues and Considerations highlighted by these examples.

Table 2.

A Summary of Issues and Considerations in the use of Enumerative Statistics to Answer Analytic Questions.

ISSUES	CONSIDERATIONS
Experimentation without consideration of the uncontrolled conditions surrounding the experiment.	Gain knowledge before implementing any recommendations. Repeat the experiment under different uncontrolled conditions.
Study conducted in controlled ambient conditions when the results are to be used in uncontrolled ambient conditions.	Use a control chart to assess the stability of the uncontrolled conditions over all of the time periods of the implementation's scope.
Study conducted on an unstable process and application of the results to an unstable or stable process.	Consult an expert in the subject matter as to the sensitivity of the process being studied to the uncontrolled conditions.
Study conducted on a new process, in non-production facilities and application of the results to the process as it will run on the production floor.	Include experts in the subject matter in all phases of the statistical work.
Analyze and implement the results of a study without the evaluation of the appropriate experts and users of the information.	Understand clearly the limitations of a study or experiment.

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The major issue raised by these examples is that enumerative statistical tests are by themselves inadequate to answer analytic questions. These methods alone cannot be used for prediction. Iterative studies, expertise in the subject matter, knowledge of the state of control of influencing variables are some examples of the additional knowledge required.

Dr. Deming's concern regarding the teaching and application of statistical tests is well founded. The cost to companies who conduct experimental designs under one set of conditions and then implement the results under another set of conditions are high. Consider the dollars invested to run the original study and implement inaccurate recommendations. Consider too, the damage done to the credibility of data-based decision-making when the expected experimental results do not appear. Industrial practitioners who continue to use the t-test and other enumerative statistics must be aware of their limitations. Recognition of both the limitations and the strengths of these methods will increase successful use in the description and prediction of many industrial processes.

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*Eileen J. Beachell is a statistical and quality improvement consultant with Quality Disciplines. She has a M.S. in statistics from Florida State University in Tallahassee, Florida and is a member of ASQC and ASA. Marilyn Monda is a statistical and quality improvement professional with Harman OEM. She has a M.A. in Behavioral Statistics from Baylor University in Waco, Texas and is a member of ASQC and ASA.

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Annual Evaluation of the Division

Beth Propst, Chair Elect
Statistic Division - ASQC

1. Introduction

This is the fifth annual evaluation of the Statistics Division. The purpose of the annual evaluation (as stated in Section 4.4 of the Operating Manual) is to “facilitate continuous improvement of the Statistics Division by measuring customer satisfaction and progress of the Division relative to McDermond guidelines and Statistics Division Vision, Mission, Strategy, Principles, Systems and Annual Tactical Plans.” This evaluation is conducted each spring by the Chair Elect.

The first three evaluations were conducted in June. Last year it was done in December, and appeared in the Spring issue of the newsletter. We have decided to replace the Spring issue with a Special Publication on a single topic of interest to our members. This means that the evaluation will appear in the Summer issue, relaxing the time-frame somewhat. The evaluation should be done prior to AQC so that some of the upgrade ideas can be included in the meetings at AQC.

2. Vision, Mission, Strategy, and Principles

Our vision is the desired end state the division is striving to achieve. Our mission is our reason for existence. The strategy defines our customers and markets. Our principles are rules to follow in the pursuit of our vision and mission. No changes have been made to these since the last evaluation. The vision, mission, strategy, and principles are reviewed at the beginning of every meeting. Poster-sized copies are usually visible on the walls at meetings (the preferred method). If they are not posted, they are distributed as handouts.

Evaluation: The five year plan is continuing towards achieving our vision and fulfilling our mission. We are in the process of cross-tabulating the vision and mission as suggested in the previous evaluation.

Upgrade: The list of Division activities should be published in the newsletter on a regular basis as suggested in the previous evaluation.

3. Customer Satisfaction

Our primary indicator of customer satisfaction, Division membership, continues to decline. We have implemented quarterly customer satisfaction surveys as well as exit interviews. So far, the data do not indicate any specific source of customer satisfaction. In fact, most members are satisfied. The data from the exit interviews also show satisfaction with our division.

Evaluation: Since membership keeps dropping while customers say they are happy, I believe we have not yet found the key indicator that explains drops in membership.

Upgrade: We need to include measures of dissatisfaction as well as measures of satisfaction in future surveys, as well as probing for future and/or latent needs of our members as keys to future products/services the Division can provide.

4. Systems

4.1 Infrastructure Renewal

Purpose: Continuously renew and improve the organizational structure of the Division.

Procedure: Past Chair is responsible.

Evaluation: This system is working well. Job descriptions have been developed for new positions. The member interest forms have generated many volunteers.

Upgrade: We still need to work on the process for committee chair/project leaders to respond to interested members. This should apply to thanking people who apply for a position that has been filled and inquiring about other areas of interest.

4.2 Conference Calls

Purpose: Facilitate communications among division leadership outside of scheduled meetings.

Procedure: Conference calls among Division leadership are held on a monthly basis.

Evaluation: This system is working well.

Upgrade: Include one tactical planning leader/committee chair per call that was recommended in the previous evaluation. Alternatively, divide the tactical planning leaders/committee chairs among the officers and have progress reports during the conference calls.

4.3 McDermond Division Management Recognition Program

Purpose: Encourage divisions to focus their efforts on meeting the needs of their members, customers, and ASQC.

Procedure: Documented in ASQC's policies and procedures. The Chair is responsible for submitting the application.

Evaluation: Statistics Division achieved the highest level, Level 3, for 1994-1995. We have applied for Level 3 again in 1995-1996, and the prognosis looks good.

Upgrade: None.

Continued on page 12

ANNUAL EVALUATION OF THE DIVISION

Continued from page 11

4. 4 *Operating Manual*

- Purpose:** Provide information needed to run the Division.
- Procedure:** Updated by Chair-Elect in prior to AQC, except for Section 2.0, Organizations, which will be updated in June.
- Evaluation:** In general, this system is working very well. Last year's suggestion that revisions to the Operating Manual should be kept as part of the Action Item Notices has been implemented.
- Upgrade:** The next time the entire manual is printed, it should be modified so that each section begins on the right-hand page. A revision history should be included following the Table of Contents. Investigate means of distributing the manual electronically. Include checklists for meeting arrangements to include room size, meals, equipment, etc. Also include checklist and responsibilities for bringing things to AQC and FTC to be reviewed in the last officers conference call prior to the event in question.

4. 5 *Tactical Planning*

- Purpose:** To develop and implement tactical plans supporting the division strategy.
- Procedure:** Planning meetings are held at the AQC and FTC. Follow-up meetings may be held as necessary.
- Evaluation:** Tactical planning meetings continue to be focused. Follow-up meetings have been working well. This year we are experimenting with splitting the tactical planning meeting at AQC (Saturday afternoon and Sunday morning) to fit in better with people's travel plans and prevent burn-out. This still allows time for follow-up meetings at AQC.
- Upgrade:** Include tactical planning leaders on conference calls or find some other means to provide updates to division leadership.

The tactical plan for creating an electronic bulletin board has been completed, we have tied in with ASQC's EBB. We are now considering establishing a Division Home Page linked to ASQC's web site. The tactical plan for "Assessing Members' Needs" has been completed. The tactical plan for "Enabling Broad Applications of Statistical Thinking" is progressing. A special publication on Statistical Thinking was sent to

members in lieu of the Spring Issue of the Newsletter. The tactical plan for "Integrating Statistical Thinking into Educational Curricula" has stalled. We will be attempting to revitalize it this year at our AQC tactical planning meeting. The tactical plans for improving the "How-To" have been folded into a tactical plan for a Publications Committee. We have filled one key position on this committee, the Publications Chair, but are still trying to fill several others. Although this tactical plan was part of our FTC meeting, the Publications Chair accepted the position after the FTC. As a result, we will be refining this plan at AQC this year.

4. 6 *Annual Division Evaluation*

- Purpose:** See Introduction.
- Procedure:** See Introduction.
- Evaluation:** This is the fifth annual evaluation. There is still no clear process. The evaluation is being printed in the newsletter. We are reviewing some of the upgrade suggestions in the monthly officer's conference calls. Many have been implemented.
- Upgrade:** Develop a process for the evaluation, as recommended last year. A previous evaluation suggested that this be a joint effort between the Chair and Chair-Elect. Input from the Chair makes sense for those systems in which the Chair has all of the experience, e.g., the McDermond Program. Add upgrade suggestions to the Action Item Notices. Complete evaluation in time to send out with notices for AQC meetings. Develop division dashboard of key results areas of division performance and include the results in the evaluation. Add a section on division dashboard to the operating manual.

4. 7 *Financial Requests*

- Purpose:** Handle requests for donation in a manner consistent with our mission.
- Procedure:** The Chair-Elect chairs this committee.
- Evaluation:** This system is working well. Using the mission and vision as a basis for decisions makes these decisions easier. The list of financial requests in the Operating Manual has been updated.
- Upgrade:** The Chair-Elect should keep a log of requests and the decisions. This log should be included in the Operating Manual.

Continued on page 13

ANNUAL EVALUATION OF THE DIVISION

Continued from page 12

4. 8 Action Item Notices

- Purpose:** Ensure that actions items resulting from meetings are completed.
- Procedure:** Keep a separate flip chart for action items at meetings. Review at end of meeting and assign responsibilities and timing. Include all action items in a single list and include at the front of the minutes. Secretary will send reminders at set intervals. Items from conference calls, etc. are captured on one list.
- Evaluation:** This system is working well. Officers are reviewing these actions items in some of the conference calls. Often there is no feedback from those not participating in conference call.
- Upgrade:** Set up electronic system to e-mail people of action items as due dates approach and encourage more regular reporting of status of action items assigned to non-officers.

4. 9 Budgets

- Purpose:** Ensures that expenses which the division incurs have been included in the annual division budget.
- Procedure:** Committee chairs and tactical plan leaders provide a budget to the Treasurer by April 15 of each year.
- Evaluation:** This system is not working well. Some individuals submit their budgets in a timely manner, but many people do not respond at all. No response is assumed to mean no budget. Last year's upgrade to include this system in the Operating Manual has not been completed.
- Upgrade:** Include this system in the Operating Manual. This will require developing a process for budgeting.

4. 10 Reimbursement Policy

- Purpose:** Ensure that expenses are reimbursed in a standard manner.
- Procedure:** Reimbursement for expenses incurred as described in the policy.
- Evaluation:** This policy has been included in the Operating Manual and appears to be working well.
- Upgrade:** None.

Statistics Division Treasurer's Report

(as of March 31, 1996)

Assets

Cash	\$ 4,049
Money Market	\$ 49,549
Certificate of Deposit	\$ 15,000
General Fund (ASQC)	\$ 2,595
Capital Assets (Net)	\$ 2,098
Long Term Assets	\$ 226,315 *
Total Assets	\$ 299,606 *

Liabilities

Total Liabilities	\$ 11,798
Total Fund Balance	\$ 287,808
Total Liabilities & Fund Balance	\$ 299,606 *

Revenue

Membership Dues	\$ 63,640.50
Ott Foundation Scholarship	\$ 195,941.63
Interest	\$ 2,982.36
Dividends	\$ 14,969.23
Other	\$ 100.00
Total Revenue	\$277,633.72 *

Expenses

Newsletter	\$ 19,731.26
Postage	\$ 11,069.60
Administration	\$ 11,566.69
Equipment Depreciation	\$ 1,452.87
Awards/Donations/Scholarships	\$ 3,242.90
Total Expenses	\$ 47,063.32

Net Income **\$ 230,570.40 ***

*Includes \$195,942 for Ott Foundation Scholarship

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Meet The Officers for 1996-1997

Beth Propst, Chair



Beth is the owner of Quality Transformation Services, a management consulting firm specializing in helping organizations become more successful through

improved performance and increased customer satisfaction. She has over nine years of consulting and ten years of industrial experience. Her areas of expertise include business process management and improvement, applications of statistical thinking to all parts of the business, innovation, and quality function deployment.

Beth has a B.S. in Business and an M.S. in Applied Statistics. She is a senior member the American Society for Quality Control and a Certified Quality Engineer. Her previous positions in the Division include Newsletter Editor, Education Chair, Treasurer, and Chair-Elect. Other ASQC activities include reviewing books for both *Technometrics* and *Journal of Quality Technology* and serving as a member of the Standing Review Board for Quality Press.

Don Emerling, Chair Elect



Don has worked for the 3M Company for the last 20 years. He is currently Quality & Technical Service Manager for the Photo Products Division. He will be joining Imation, a

spin-off of 3M's information and imaging businesses as of July 1, 1996. He will continue to be located in St. Paul, Minnesota.

Don has been active in the Statistics Division of ASQC since 1989. He led the tactical plan team which developed the Statistics Division "House of Education" special edition of the newsletter and one of the authors of the recent special publication on *Statistical Thinking*. He has served as the Secretary of the division for the last two years.

Don has a BS in Chemistry from the State University of New York at Brockport and a MS in Applied

Statistics from the Rochester Institute of Technology (RIT).

Bob Mitchell, Secretary



Bob Mitchell has worked for 3M Company the last 15 years. He is currently Project Leader for the Tape Manufacturing Division, Surface Mount Supplies business unit, located in

Hutchinson, Minnesota. Bob has held previous positions in Quality Engineering, Process Development, Process Engineering, Supplier Management, Statistical practitioner and consultant, and Technical Supervisor. Bob is also active in his community as a Quality Management consultant.

Bob has been a member of ASQC for 9 years, is a CQE, and has been active in the Statistics Division for 4 years, serving as Membership Committee Chair. Bob has led several tactical plans including "Assessing Member Needs" survey development and "Role of Regional Councilor" infra-structure.

Bob has a BS in chemistry from the University of Minnesota-Morris, and is an inaugural member of 3M's Statistical Practitioner Forum.

Don Williams, Treasurer



Don Williams is founder, president, and senior consultant of Process Improvement Consultants, a management consulting firm specializing in assisting clients in

continuous improvement of their processes, products, and services. He is a former senior consultant with Process Management International, and is the founder and former director of the Center for Quality and Productivity at the University of North Texas.

He has a doctorate in mathematics and statistics from Oklahoma State University. Don is a Senior Member and previously served as Certification Chair of the Statistics Division.

Exciting Project in Education

The Education Committee of the Division is currently working on a project to bring Statistical Thinking into our school systems using the World Wide Web. Our goal is to have a working Home Page developed, tested and ready for use by May of 1997. And you know what?... We won't be able to achieve that goal without your help!

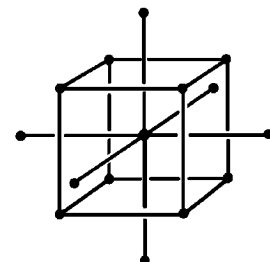
We are currently looking for:

1. A company or other institution to sponsor our site on the WWW. Projected need begins in October of 1996.
2. A "Webslinger" out there to assist in development of the Home Page. Should be experienced in HTML, graphics, and animation. This person must be able to devote a block of time between October and May for this important project.
3. Someone with experience in grant writing, who would be willing to assist us in proposals for this project.

If you can help in any of the capacities listed above, please call Chris Ayers at (804) 527-7158 or eMail at CAyers@Hambeach.com. Our needs for volunteers will change as this project unfolds. We will keep you informed via the newsletter.

Thanks!

Chris



40th Annual Fall Technical Conference

October 24-25, 1996

Scottsdale, Arizona

The theme of the 40th Annual Fall Technical Conference is "Leveraging Data for the Quality Transformation." Conference sessions will offer the latest developments in statistical methods as they relate to Quality Improvement.

The Statistics Division will sponsor two short courses on Wednesday, October 22, from 8:30 a.m. to 5:00 p.m. The \$150 of the course includes coffee breaks and lunch. Below are descriptions of the courses.

Statisticians as Change Agents

Robert F. Lynch

Successful change requires skilled change agents. Without effective follow-up, inertia and resistance can turn the most compelling visions for

change into another "flavor of the month." Through planning, coaching and persuading, statisticians can guide the implementation of statistical applications and concepts within their organization. To thrive, change agents must have confidence and competence, a solid plan, clear roles and a set of techniques that work. This is a hands on class where you practice the consulting skill sets of listening, contracting and advising to identify practical action steps.

Multivariate Control Charts and Process Monitoring

Douglas C. Montgomery and George Runger

Most industrial processes are characterized by many related variables,

and simultaneous monitoring or control of these variables is essential to successful quality assurance. Monitoring several process variables individually with traditional univariate control charts is difficult and usually unsuccessful. A more appropriate approach is to use multivariate control charts which account for the interrelationships among the process variables. This course gives an introduction to multivariate control charts and related techniques for process monitoring, including principal components and partial least squared. The application of these techniques to a variety of industrial settings is described, with emphasis on the chemical and process industries and semiconductor manufacturing.

Call for Authors for the ASQC "How To" Series

The "How To" series is prepared by the Statistics Division of the American Society of Quality Control and is published by Quality Press.

The purpose of the series is to provide Quality Professionals, and others using statistical thinking and methods, the statistical tools necessary for successfully performing their job. We are particularly interested in contacting authors who want to take a bold, innovative approach to presenting statistical methods to professionals in the quality field.

Each "How To" publication has the following elements:

1. Focuses on a well defined problem and/or statistical method to solve a problem.
2. Provides the reader with information which can be immediately applied on the job.
3. Communicates to a reader who has basic to intermediate training in statistics.
4. Uses examples throughout the publication.
5. Is less than 100 pages in length.

Authors of the series are expected to:

1. Be experts in the subject matter.
2. Communicate their knowledge in a practical way to users of statistics who may not be degreed statisticians.
3. Be willing to see innovations through the editorial and review process.

As an author you will benefit through the exposure of your name to a wide range of professionals who need your expertise. Also, you will receive compensation via royalties based upon publisher's receipts.

Interested authors should contact:

Bob Brill
Monsanto Co.
800 N. Lindbergh Blvd.
St. Louis, MO 63167

office: 314-694-1684
fax: 314-694-5466

email: rvbril@ccmail.monsanto.com

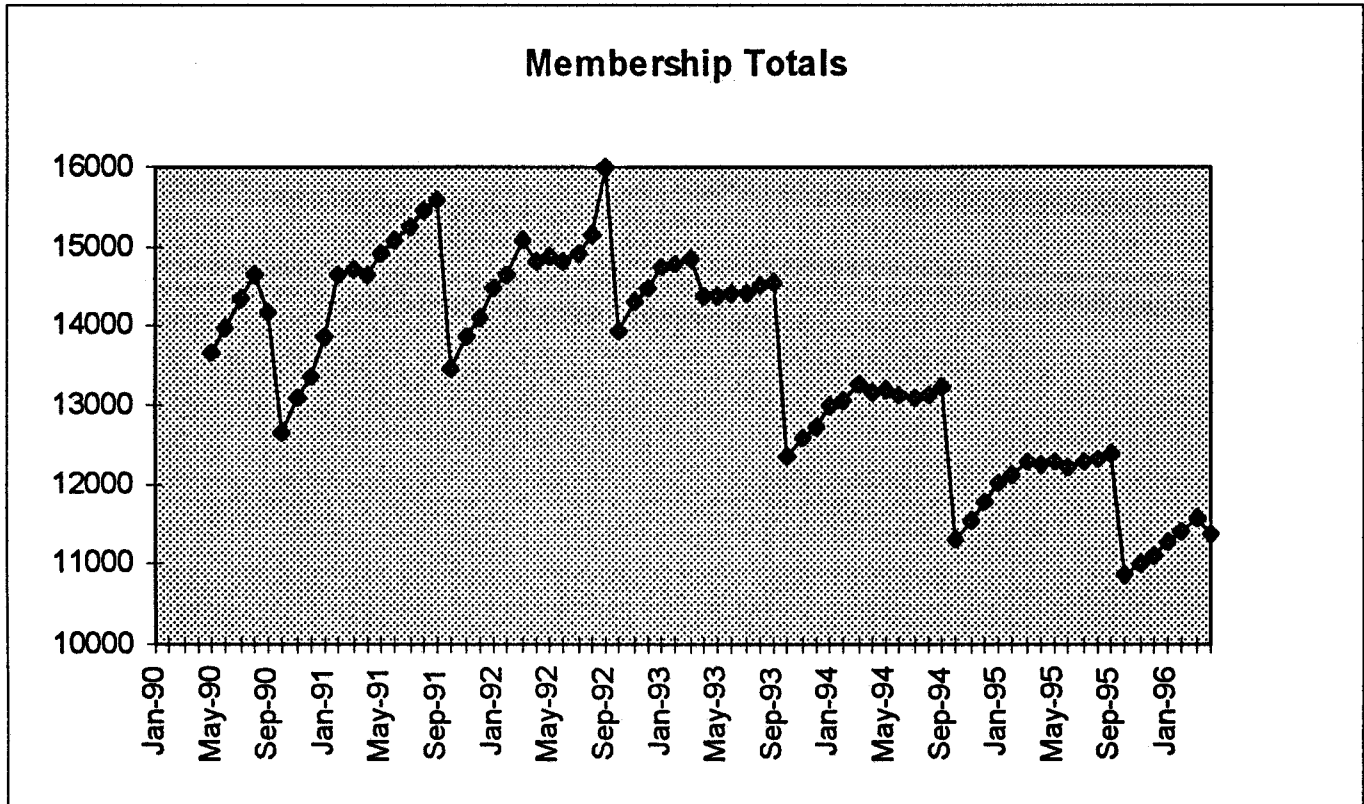
Walter Liggett
National Institute of Standards and Technology
NIST North 353
Gaithersburg, MD 20899

office: 301-975-2851
fax: 301-990-4127

email: wliggett@cam.nist.gov

Membership Report

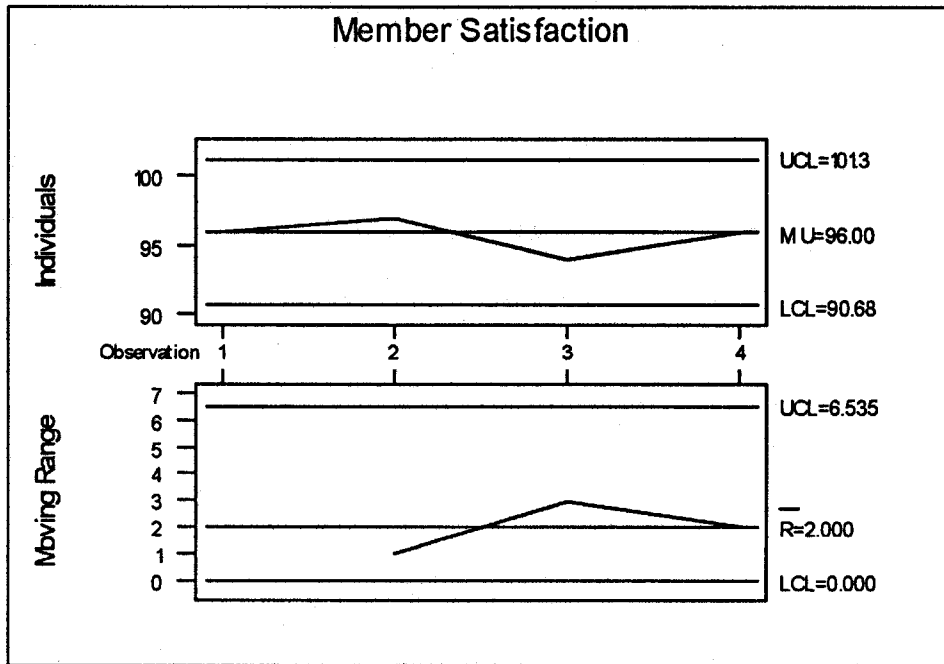
Current Statistics Division membership stands at 11,393. This figure is down considerably from the 15,999 high-water mark in September 1993, but represents growth of the Division since October 1995. Still, a time-series plot of our membership shows a continuing pattern of “down- sizing” since the September-October 1993 timeframe (perhaps we are “right-sizing”...).



Despite our Mission, Vision, Strategy, and Principles (see inside front cover), and our recent Long-Term Planning and Tactical Planning initiatives to provide customer value, we continue to see declining membership in a period when ASQC continues to show growth. Today there are 21 Divisions and three new Committees to choose from when subscribing to ASQC, and each commands \$6 to \$8 annual membership fee. Perhaps this degree of specialization and over-whelming choices coupled with the slow economy is forcing ASQC members to limit their division affiliation. The Membership Committee Chair is currently working with ASQC to determine whether a shift or pattern in division affiliation can be observed in the membership totals and renewals.

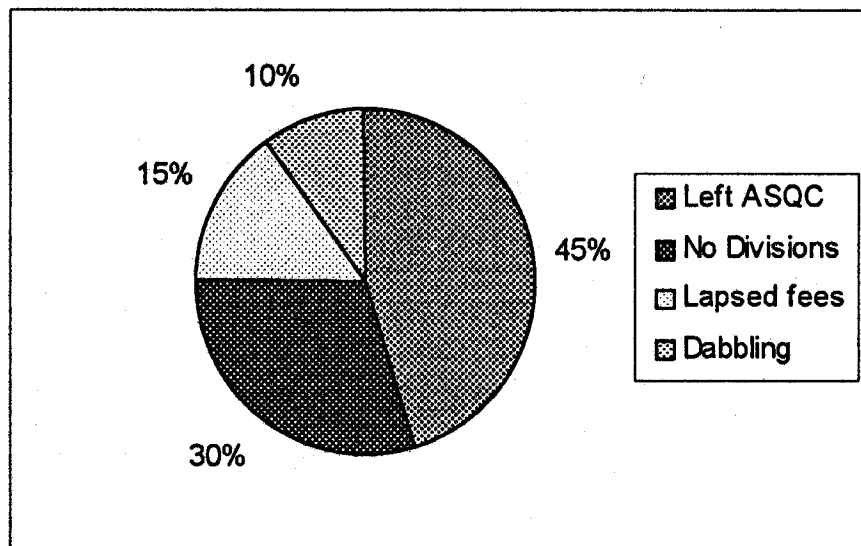
Regardless, it is imperative that the Statistics Division continues to serve its members and customers well. Current tactical Plans include “Enabling the Broad Application of Statistical Thinking”, “Integrating Statistical Thinking into Education”, “Assessing Member Needs”, “Re-defining the Role of Regional Councilors”, and formation of a Publications Committee to develop new How to... booklet series titles and authors. An Acquisitions Editor is being sought for purposes of identifying new Case Studies and Mini-Papers. Mark Keil, our BBS Administrator, is checking into the feasibility of developing a Statistics Division www homepage on the Internet.

Results of four quarterly Member Needs surveys indicate an overall satisfaction rating of 96% for the Statistics Division:



Members rank the Division Newsletter, CQE Body of Knowledge, Short Courses, and How To booklet series as the most valued Statistics Division products and services. More Case Studies and Mini-Papers in the Newsletter, and keeping members current on new tools are the most important issues to our members.

Exit Surveys of our "Lost Members" (a.k.a. Unpaid) reveal the high cost of ASQC membership as the number one reason for not renewing Division membership: 45% of the polled Unpaid have left ASQC altogether; 30% have discontinued all division affiliation; 15% were not aware that their Statistics Division membership had lapsed; and, 10% of the sample are dabbling in the other divisions.



Membership Satisfaction among the Unpaid for the Statistics Division products and services rated an 80% approval and 15% neutral.

Responses from both the Member Needs and Exit Survey are fed into the Division tactical planning process to validate our efforts towards providing exceptional customer value and to PDCA the 5 year Long-Term Planning process.

STATISTICS DIVISION'S ANNUAL MEETING

Hilton Towers Hotel, Chicago, IL

5:30 - 7:30 PM, Monday, May 13, 1996

Agenda

A. OVERVIEW

1. Introductions

Nancy Belunis led the introductions. The following were in attendance:

Bruce Ankerman	Division Member
Nancy Belunis	Division Chair
Don Emerling	Division Secretary
Bob Mitchell	Division Membership Committee Chair
Don Williams	Division Treasurer
Larry Haugh	Division Member
Howard T. Fuller	Division Member
James Duarte	Division Member
Ed Schilling	Division Standards Committee Chair
Bill Bleau	Division Regional Councilor
Don Strickert	Division Publications Committee Chair
Janice Shade	Division Newsletter Editor
Galen Britz	Division Past Chair
Beth Propst	Division Chair-Elect
Robert H. Frost	Division Member(famous poet?)

2. Review/Revise Agenda

No revisions were made.

3. Review Mission, Vision, Strategy and Principles

Nancy Belunis did this.

B. REPORTS

1. Membership

Bob Mitchell reviewed the membership report and the membership chair's activities. Membership continues to drop.

2. Financial

Don Williams presented the financial review. Our finances are healthy but we are still spending more than our income brings in. The majority of our expenses are in the publication and distribution of the newsletter.

3. Tactical Plans

Don Emerling gave an update of the "Enabling Broad Application of Statistical Thinking" tactical plan.

Bob Mitchell gave an update of the "Regional Councilor/Section Liaison" tactical plan.

Don Williams gave an update of the "Statistical Thinking Virtual Academy" tactical plan.

Don Strickert gave an update of the "Publications Committee" tactical plan.

4. Bulletin Board/Home Page

Nancy Belunis reviewed the activity on the Bulletin Board/Home Page for Statistics Division. Bob Frost suggests that we put on the home page public domain statistical materials.

5. Newsletter

Janice Shade reviewed the activities in the Newsletter area. We plan to have three newsletters and a special publication every spring. Next year's special publication will be generated from the material Tom Swails is presenting at this year's conference. Janice put in her pitch for the acquisitions coordinator, who will be a big help to the newsletter editor.

6. Other Activities

Nothing reported.

C. QUESTIONS & ANSWERS

Ed Schilling asked if the Statistics Division has a standards committee. The answer is yes. Ed Schilling is the chair of that committee. Their major activity at this time is to revise the standards on control charts.

Bill Bleau asked if there is any feedback on the new Glossary. Nancy answered that it was just published and it's too early to tell how it's selling. With this edition the Statistics Division is receiving royalties from this publication.

Ed Schilling commented that he thinks the activity going on in the publications committee is almost as exciting as the work going on in the standards committee.

Bill Bleau mentioned that all of the sections have educational courses that they teach. There is a real opportunity for us to develop simple educational training materials for these activities. Packages for people to teach in industry, and other areas. It should have overheads, and facilitator's text.

James Duarte suggests that we use case studies of the application of statistical tools, especially at the intermediate level of tools.

Robert Frost suggested that we get to high school kids by focusing on the high school teachers. Arranging summer sessions where teachers can get credit, teaching statistical thinking concepts and application methods.

D. Nancy Belunis adjourned the meeting at 6:50 PM.

Respectfully submitted

Don Emerling
Statistics Division Secretary
June 6, 1996

AQC



In recognition of outstanding service to Statistics Division. L-R Foreground: R. Lewis, S. Bailey, G. Britz. Background: L. Hare - Presenter.



Council Meeting. L-R: D. Emerling - Chair-Elect; R. Lewis - Past Chair; L. Haugh - 1997 AQC S.D. Session Manager; G. Britz - Past Chair.



Tom Swails addresses a standing room only audience.



Division Leadership. L-R: R. Mitchell - Secretary; D. Williams - Treasurer; B. Propst - Chair; D. Emerling - Chair-Elect; N. Belunis - Past Chair.

Call for New Regional Councilors

The Statistics Division has openings for two Regional Councilors: in region #5 (Pennsylvania, Delaware, and Maryland) and in region #9 (Indiana, Kentucky, and northwestern parts of Ohio). If you would like to become more involved in the Statistics Division, and enjoy networking with fellow statistical practitioners, we would like to hear from you.

At the October 18, 1995, Statistics Division Council meeting, a change to the Division bylaws was approved that allows for more flexibility in appointing as many (or as few) councilors as needed to address the needs of our members and customers. The appointed Regional Councilor is a non-voting member of the Statistics Division Council. Regional Councilors serve as a link between the Division and the ASQC Sections. An excerpt from the existing job description is summarized below.

Purpose:

To serve as section liaison for the Statistics Division.

Responsibilities:

Participate with the Statistics Division Council to determine how the local sections can help implement Division tactical plans, communicate Division news, and seek active member participation.

Contact Section Chairs to determine how the Statistics Division can help provide speakers, communicate events, schedule short courses, etc.

Exhibit the Statistics Division display booth at local section meetings, disseminate pamphlets and brochures, seek new members.

A "Role of Regional Councilors" tactical plan is being formulated to optimize the Statistics Division infra-

structure to better meet the needs and demands of our members. Recent surveys indicate the need for more cooperation between Sections, Divisions, and ASQC National to sponsor more frequent short courses, seminars, and conferences at the local level. This tactical plan is examining the feasibility of using Section Liaisons, reporting to the Regional Councilor, as Division ambassadors to the local Sections.

Interested members are asked to fill-out the enclosed "Member Interest Record Form" and/or contact: Bob Mitchell, Membership Committee Chair, (320) 234-1864; Internet address:

bob3m@hutchtel.net.

Description of Job Openings

Membership Chair

The membership chair promotes and monitors Division Membership, coordinates Society promotional activities with the Division, and serves as Regional Councilor Coordinator. As Regional Councilor Coordinator, the Membership Chair provides leadership to the Regional Councilors, who serve as liaisons among the Division's leadership, its members and Sections.

Acquisitions Coordinator

The Acquisitions Coordinator manages the process of identifying, attracting, and recruiting appropriate persons to serve as authors for Statistics Division publications. The Acquisitions Coordinator will work closely with How-To Booklet Series Editor, ASQC Briefings Editor and Newsletter Editor to develop a list of potential topic areas consistent with the needs of Division customers. This person will be responsible for identifying potential authors through such activities as networking, reading and evaluating works published in other professional publications, and advertising for authors.

ASQC Statistics Division Job Openings and Member Interest Form

Job Openings

We currently need volunteers to serve in the following positions:

1. Membership Committee — Chair
2. Publications Committee — Acquisitions Coordinator

If you are interested in volunteering for one of these positions, please fill out the form below and send it to:

Past Chair Nancy Belunis
Merck & Company
One Merck Drive 735-1107
Whitehouse Station, NJ 08889-0100

In addition, proposals for newsletter Mini-Papers and Basic Tools articles are always welcome.

Member Interest Form

Name: _____ Date: _____

Title: _____ Member No.: _____

Address: _____

Phone: _____ Fax: _____

E-mail: _____ Membership: ___ Reg. ___ Sr. ___ Fellow

Education/Certifications/Experience: _____

Time Availability/Company Support: _____

Please check or circle all areas of interest:

<input type="checkbox"/> Education Committee	<input type="checkbox"/> Awards Committee	<input type="checkbox"/> Standards Committee
<input type="checkbox"/> Examining Committee	<input type="checkbox"/> Certification Committee	<input type="checkbox"/> Newsletter Committee
<input type="checkbox"/> Membership Committee	<input type="checkbox"/> Program Committee	

Positions include: Annual Quality Congress (AQC) Division Session Manager, AQC Short Course Chair, AQC Technical Paper Reviewers, AQC Topic Session Manager, Fall Technical Conference (FTC) Technical Program Chair and FTC Short Course Chair.

Publications Committee

Positions include: Acquisitions Coordinator, Glossary Editor, Briefings Editor, How-To Series Editors and New Products Coordinator.

Other: _____

ASQC STATISTICS DIVISION REGIONAL COUNCILORS

Region 1:

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32 Dartmouth Drive
Mystic, CT 06355

Phone: (203) 445-3145
Fax:

Region 6:

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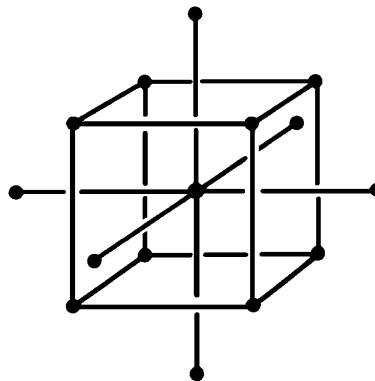
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