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## Do quality organizations utilize their internal audit departments differently?

Matthew E. Garling

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**Do**

**Quality Organizations**

**Utilize Their**

**Internal Audit Departments**

**Differently?**

*Matthew E. Garling*  
**Honors Capstone**  
**Spring 1996**

**Do Quality Organizations Utilize Their  
Internal Audit Departments Differently?**

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*Appendix A*

Copy of the two surveys used to gather data.

*Appendix B*

Table analysis of questions included on both surveys.

*Appendix C*

Table analysis of questions on internal audit survey.

*Appendix D*

Table analysis of questions on non-internal audit survey.

Bibliography

## INTRODUCTION

The vast majority of companies in the United States have Internal Audit Departments, or something which functions as such. These departments are utilized by the company to evaluate how well the company is adhering to standards established by management.

As a result, the internal audit function is often considered a completely internal function, almost as if it was a separate entity from the company's quality control function or business itself. In many respects, this is the correct assumption because the internal audit function must maintain its own independence so that it may be objective in its evaluations.

Many companies utilize their internal audit function only in these 'classical' functions--to investigate how well management controls are being adhered to, as well as provide additional assurance beyond an external auditor's report. However, other companies may use their internal audit function for additional functions, such as assisting in cost-cutting, Total Quality Management, re-engineering, and Just In Time because the internal audit function has knowledge of the company systems, yet can be more objective because they are removed from day-to-day operations of the company.

A few questions may be inferred from this situation: 1) Does the internal audit function directly or indirectly effect the quality of a company's product through its work (if so, how much of an affect does it have--i.e., is it measurable?)? 2) Are some

companies utilizing their internal audit function to directly monitor and improve the quality of their products? These questions formed the premise to the research for this paper.

For purposes of this paper, internal audit is defined as the function whose original job is to benchmark compliance with management controls and standards. The internal audit function may be a separate department, or it may be as small as a portion of one employee's duties. Management controls and standards will be widely defined to include anything that management wants to set a measurable standard for. Quality will always refer to a company's product(s) and its perceived level of quality by customers.

### **HYPOTHESIS**

A short search for other published material which researched the relationships between quality products and internal audit departments proved fruitless. However, one company contacted as a result of this paper claimed to have been contacted concerning similar research in the past. A textbook was consulted concerning Total Quality Management (Beyond Total Quality Management: Toward the Emerging Paradigm--Bounds, Greg, et al). This book was utilized to gain a general background to the quality efforts throughout organizations, in what ways internal audit functions may already be utilized, as well as to identify possible additional areas where internal auditors may be of assistance.

From this preliminary reading, the research was narrowed to the topic of researching whether companies which produce quality products utilize their internal audit departments any differently than the average company.

The preliminary hypothesis was that there would be a difference in the utilization of the internal audit function by companies who produced quality products. The hypothesized differences were twofold: First, quality companies would have their internal auditor(s) more directly involved with the company's operations and improvement efforts; Secondly, the quality company's employees would regard the internal audit function as a partner in the business, as opposed to the average company who would generally regard the internal audit function as an adversary.

### **METHODOLOGY**

To determine what companies had quality products would have taken an additional research topic of its own. Therefore, others' criteria were relied upon. For the purpose of this paper, quality companies were deemed to be those who had won the Malcolm Baldrige National Quality Award from the Commerce Department of the United States Government. The Malcolm Baldrige National Quality Award (Baldrige) has been awarded since 1988. Currently, it is awarded to one company per year in each of three categories: manufacturing, service, and small business.

Utilizing these companies as the companies who produced quality products lended this research a broad scope in terms of industry, size, and geographical location. A 'Quality Contact' at each company was obtained from the Commerce Department. These employees were contacted by phone and asked to participate in this research. Out of twenty-five possible contacts, eighteen agreed to participate.

To determine which companies were 'average', Standard Industrial Classification Codes (SIC Codes) were consulted. The four digit SIC Code for each Baldrige winner was obtained. Next, two other companies (who were willing to participate) with the same four digit SIC Code and similar sales volumes were contacted. On two occasions, a Baldrige winning company was too small to be researched in this manner. As an alternative, three digit SIC Codes were used in addition to asking the company for the names of two of their competitors. If a company was involved in more than one industry, the industry which had the highest sales volume was used as the guide for matching with other companies through SIC Codes.

Research at these companies was conducted through two surveys. One survey was for internal audit employees, and the other was for non-internal audit employees. A copy of each survey is located in Appendix A. These surveys (and a cover letter) were faxed to each contact. The contact was asked to give the survey to three or four internal audit employees, and three or four non-internal audit employees in differing areas of the company (including themselves).

The intent was to obtain a random sample from other areas of the company. The surveys could then be returned by either fax or mail.

Surveys were sent to forty-six companies. A total of nineteen companies responded, eight of whom were Baldrige winners. Unfortunately, many companies only filled out one copy of each survey. Twenty-four internal audit surveys and twenty-one non-internal audit surveys were received. This small sample size limits the strength of the results for many survey questions. However, results to many individual questions remain strong, and others, although not statistically conclusive, point in the direction which was expected.

The survey data was analyzed using SPSS PC, a statistical application which worked very well for the data from this survey. Survey responses were given a numerical value so that a statistical analysis could be done. Corresponding numbers to each question are explained in the *FINDINGS* section of this report.

A frequency analysis was done to investigate the integrity of the entered data. All errors were promptly corrected. Statistical analysis centered upon t-tests, which were done for most questions. Some other analysis was done, (mainly CHISQ), although none of this proved conclusive enough to present in this report.

Appendixes B, C, and D contain tables showing the t-test results for questions with significant results. Appendix B contains results for questions which were included in both the internal audit and non-internal audit surveys. Appendix C contains results for questions which were contained solely in the internal



audit survey. Appendix D contains results which were included solely in the non-internal audit survey. Each table has the question to which the results pertain written above it in bold print. This should allow for easy cross-reference to the survey itself (Appendix A).

### FINDINGS

A copy of the two surveys is located in Appendix A. The results will be reported upon by simply following through Appendixes B, C, and D.

Appendix A contains all of the questions which were included in both surveys. Tables B-1, B-2, and B-3 display the results of questions concerning who determines quality for the company (Table B-1), who produces specific 'quality' standards (Table B-2), and who monitors the company's quality (Table B-3). Respondents were asked to rate four sources (Customers, Upper Management, Marketing, and Production Management) as to their influence over the question matter. The four ratings and their related score for analysis are: very influential (3), somewhat influential (2), limited influence (1), and no influence (0).

Although the results are generally not strong enough statistically to provide unquestionable results, the trends were in the expected direction. For example, Tables B-1 and B-2 show that Baldrige winners rely more heavily on the customer and less on

marketing than non-Baldrige winners. Although the significance in this sample size is not conclusive, these results would be expected from a quality company.

Table B-4 shows another example of data which points in the expected direction, but was not significant. Non-internal audit ideas for improvement were considered more often in the Baldrige winners. According to the preliminary hypothesis, a quality company would involve its internal audit function in improvement more often. Likewise, the company would also be more apt to listen to any employee's idea for improvement, regardless of their department. This question asked how often non-internal auditor ideas for improvement were considered. Ratings and their scores were: never (0), occasionally (1), half the time (2), sometimes (3), almost always (4).

Tables B-5 and B-6 show some significant and interesting data. In Table B-5, respondents were asked how the internal audit department was viewed by various areas of the company. This table is actually a compilation of five questions rating the view these areas of the company have of the internal audit function. The ratings and their scores were as follows: adversary (0), indifferent (1), and partners in business (2). As expected, the Baldrige winners consistently ranked their internal audit functions closer to partners in business than the non-winners. In addition, the Middle Management, Board of Directors, and Internal Audit Department all had high levels of significance. As expected, companies who are pursuing quality products considered their

internal audit functions to be a part of the team.

Table B-6 is related to the team aspect of managing a company. As expected, the Baldrige winning companies had more actively involved Boards than the non-winners. This question asked respondents to rate the Board of Directors involvement with the company on the following scale: non-existent (0), disinterested (1), indifferent (2), active (3), and overpowering (4). As expected, the companies who produced quality products had active boards, but not overpowering. They were involved in the company but still left management of the company up to the managers. In contrast, the non-winners were significantly lower, and also had a higher standard deviation. This is consistent with the teamwork conclusion in quality companies. Presumably, a company who involves their internal audit function as partners in business, probably also has more involvement from every area of the company. The relationship between an active Board and its effect on a company's quality would be another interesting research topic.

Appendix C contains the results of questions which were asked solely on the internal audit survey. Table C-1 relates to a question which obtained information as to where new-hires for the internal audit department were obtained from. Respondents were asked to rank the frequency of use on the following scale: never (0), rarely (1), common (2), and often (3). The sources which were ranked were: college graduates with accounting degrees, other college graduates, associate degree graduates, other companies, public accounting, and within the company.

As expected, the Baldrige winners more frequently found employees from accounting degree candidates and within their own company, and less often from other companies. These three results all had strong significance values. A quality company would desire its internal audit department to have cost accounting knowledge, as well as in depth knowledge of the company itself. As a result, the company would tend to hire a higher percentage of accountants who would have cost accounting knowledge and be able to bring about process improvements through that knowledge. In addition, by using company employees the internal audit department (as a whole) has in-depth knowledge of each area of the company. In addition, if these employees later return to their original department, they would have better knowledge of the company as a whole and how each part inter-relates. As a result of this emphasis, it would be natural to hire fewer employees from other companies.

Table C-2 shows destinations employees go to when they leave the internal audit function. Respondents ranked five categories: financial positions, general accounting, line management, executive/staff level, and other companies. These were each ranked using the following categories: never (0), rarely (1), common (2), and usual (3). As the table shows, internal auditors with Baldrige winners generally went to financial and accounting positions more often, although the significance factor was not conclusive. However, the trend is in the expected direction. The line management and executive level were not included in the table because they are almost identical between Baldrige winners and non-

winners. As expected, the Baldrige winners had a significantly lower number of employees leave for other companies. This would be expected if the company regarded its internal audit function as partners in business because the internal audit employees would feel as if they were a valuable part of the company. In addition, this response had a very strong significance factor.

Table C-3 through Table C-6 attempted to evaluate how much involvement the internal audit function had in each company's improvement efforts. Table C-3 asked what percentage of the time management listened to the internal audits suggestions by circling a percentage (analysis score in parenthesis): 0-25% (0), 25-50% (1), 50-75% (2), 75-90% (2), 90-100% (3). As expected, the Baldrige winners marked a substantially higher percentage, giving the question a high statistical significance.

Table C-4 asked what percentage of recommendations were actually implemented, and was scored with the same responses as Table C-3. The significance factor was strong on this question, showing that Baldrige winners were more likely to listen to and implement ideas.

Tables C-5 and C-6 show that Baldrige companies involve their internal audit functions less in the implementation and post-implementation evaluation of improvement recommendations. These two Tables were scored as follows: never (0), occasionally (1), sometimes (2), usually (3), always (4). As expected, the internal audit function in Baldrige winners was less likely to evaluate the recommendations effectiveness.

The data from these four questions (Tables C-3 through C-6) was as expected. Baldrige winners were more likely to listen to and implement internal audit suggestions, and less likely to have their internal audit department evaluate a recommendations effectiveness. Likewise, a quality organization would be more open to ideas for improvement (from all areas of the company, not only internal audit) and would be less likely to use internal auditors for the more traditional roles of evaluating the effectiveness of management controls.

This is partly due to the possibility that a cost accounting function would be more likely to evaluate effectiveness of a recommendation. However, a quality company would also be less likely to use internal auditors for this because their management control systems are more advanced. An advanced management control system requires less auditing for effectiveness, allowing internal auditors more time to evaluate for further improvements (future-oriented) as opposed to evaluating current performance against established criteria (past-oriented).

The last table in Appendix C (Table C-7) gathers information on internal audits reporting methods. This question asked respondents what percentage of internal audit reporting was done on a formal basis. Responses were written on a blank line. The results are in raw numbers (percentages) entered by respondents. Although not statistically significant due to the large standard deviations, the trend was expected: Baldrige winners utilized formal communication more often than non-winners. This would

suggest that a quality company has more formalized system for internal auditors to report their findings, and therefore better and more efficient communication of ideas.

Appendix D contains the results to questions which were asked only on the non-internal audit survey. Tables D-1, D-2 and D-3 were all scored on the same criteria. The responses were scored as follows: never (0), sometimes (1), half the time (2), usually (3), and always (4). Table D-1 investigates how often each department is informed directly about internal audit recommendations which relate to them. As expected, Baldrige winning companies informed their departments almost all of the time. A quality organization would want its operating departments to be more informed because this can lead to further improvements from the employees who know each individual department best. The results to this question were statistically significant.

Tables D-2 and D-3 investigate whose decision it is to implement recommendations. Although not statistically significant, the trends were expected. Table D-3 shows that Baldrige winning companies were less likely to have the implementation decision made by senior management, suggesting that employees are more empowered in quality organizations. Table D-2 shows no significant results in determining how often each individual department is able to decide which recommendations to implement. The similarity in this table is expected since many companies are emphasizing employee empowerment. However, when considered in conjunction with Table D-3, the trend seems to be that quality organizations push the

implementation decision to a lower level. This was the expected result.

### CONCLUSIONS

This research was a small beginning into what can be a very interesting and expansive area to study. Quality can be questioned by investigating many other areas of the company also. Internal audit functions may very well play a significant role in producing quality products, although many other departments may also play a similar role which does not form an obvious relationship to quality.

Although this study did find some questions which had substantial statistical significance, it was a very limiting study. This research has only scratched the surface of what information remains to be learned in this area. However, this research can prove as a good 'springboard' through which to find more specific areas to investigate in depth.

Although a good beginning to research in this area, this study had limitations: size, non-randomness, and self-fulfilling bias. The sample size was too small to make any conclusive conclusions, although the range of company sizes and industries provides a broad base for further research. No differences were discovered concerning differences in industries or geographical locations.

Another limitation is the non-randomness through which the



survey was conducted. Although this allowed for easier comparison between companies, further research needs to be conducted utilizing larger sample sizes with more randomness in their distribution.

Lastly, the surveys were sent out with preliminary expectations as to results. This may have developed into some self-fulfilling bias when surveys were compiled and analyzed even when objectivity was attempted.

Future research needs to be conducted to further investigate specific areas touched upon in this survey. This research has highlighted some areas of difference between quality companies and their competitors, mainly how quality companies generally regard their internal audit function as partners in business. Further research needs to be done to analyze specific ways in which internal audit utilization differs. This future research also needs to be done on a larger scale (larger sample size) and with better sensitivity.

# ***APPENDIX***

## ***A***

## Questions for the Internal Audit (I/A) Department (or its equivalent)

Has your company applied for the Malcolm Baldrige Quality Award?

YES                      NO

--If yes,

--how many times has your company applied?

1            2            3            >3

--has your company won the Malcolm Baldrige Quality Award?

YES                      NO

If yes, in what year did your company win? \_\_\_\_\_

How many employees are employed in the I/A department?

0-5      5-10                      10-15                      15-20                      >20

From what source(s) do you obtain new-hires for the Internal Audit Department?

College Graduates - Accounting majors	never	rarely	common	often
College Graduates - Other majors	never	rarely	common	often
Associate Degree Graduates	never	rarely	common	often
Other Companies	never	rarely	common	often
Public Accounting Firms	never	rarely	common	often
Other Areas Within Your Company	never	rarely	common	often
Other: _____	never	rarely	common	often

What is the average amount of time (in years) an employee spends as part of the Internal Audit Department?

<1      1-2      3-4      5-6      7-8      9-10      >10

When employees leave the Internal Audit Department, where have they gone?

Financial Positions	never	rarely	common	usual
General Accounting	never	rarely	common	usual
Management Positions:				
Line Management	never	rarely	common	usual
Executive/Staff Level	never	rarely	common	usual
Other Companies	never	rarely	common	usual
Other: _____	never	rarely	common	usual

What percentage of your department has the following degrees as their highest degree obtained?

	Percent having this degree
High School	_____
Associate Degree (2 Year)	_____
University Degree (4 Year)	_____
M.B.A.	_____

Please rank the relative preference or importance of the following designations in your company. Please also indicate if any of the designations is required.

	Importance Rank (1 through 3)	Check if Required
C.P.A.	_____	_____
C.M.A.	_____	_____
C.I.A.	_____	_____

Of all of the reports and feedback provided by Internal Audit Department staff, what percentage are through formal organization channels and what percentage is through informal reports or verbal communication?

Formal                    \_\_\_\_\_  
 Informal                   \_\_\_\_\_

How would you classify the Board of Directors involvement with the company?

Non-existent    Disinterested    Indifferent    Active    Overpowering

When I/A makes a recommendation for improvement, what percentage of the time does Management listen to the suggestion?

0-25%    25-50%    50-75%    75-90%    90-100%

What percentage of recommendations are implemented?

0-25%    25-50%    50-75%    75-90%    90-100%

--When recommendations are implemented, how often is I/A involved in the implementation?  
 Never    Occasionally    Sometimes    Usually    Always

--During or after implementation, does I/A audit the effectiveness of the recommendation?  
 Never    Occasionally    Sometimes    Usually    Always

To what extent does each of the following provide a basis for determining quality for the company:

	very influential	somewhat influential	limited influence	no influence
--Customer	4	3	2	1
--Upper Management	4	3	2	1
--Marketing	4	3	2	1
--Production Management	4	3	2	1
--Other: _____	4	3	2	1

To what extent does each of the following help to produce specific 'quality standards':

	very influential	somewhat influential	limited influence	no influence
--Customer	4	3	2	1
--Upper Management	4	3	2	1
--Marketing	4	3	2	1
--Production Management	4	3	2	1
--Other: _____	4	3	2	1

To what extent is each of the following relied upon to monitor the 'quality' of the company's product/service:

	very influential	somewhat influential	limited influence	no influence
--Customer	4	3	2	1
--Upper Management	4	3	2	1
--Marketing	4	3	2	1
--Production Management	4	3	2	1
--Other: _____	4	3	2	1

Does the Internal Audit Department get involved with vendor certification?

Never    Occasionally    Half the Time    Sometimes    Almost Always

Are non-I/A employees ideas for improvement considered?

Never    Occasionally    Half the Time    Sometimes    Almost Always

Where do the ideas come from?

Please rank the top three sources

Line employees \_\_\_\_\_  
 Line Management \_\_\_\_\_  
 Finance Department \_\_\_\_\_  
 Accounting Department \_\_\_\_\_  
 Middle Management \_\_\_\_\_  
 Upper-Level Management \_\_\_\_\_  
 Other: \_\_\_\_\_

Are company employees (non-Internal Audit staff) educated about internal controls?

YES                  NO

--If yes,

--in what ways are company employees educated about internal controls?

Check all that apply

Rank by Use

\_\_\_ Self-Education (books, training manuals, etc.) \_\_\_\_\_  
 \_\_\_ Classroom w/ teacher (when first hired) \_\_\_\_\_  
 \_\_\_ On-the-Job (as the situation arises) \_\_\_\_\_  
 \_\_\_ Expected to know prior to employment \_\_\_\_\_  
 \_\_\_ Ongoing Current Education  
     Training Manuals/Videos \_\_\_\_\_  
     Classroom w/ Teacher \_\_\_\_\_  
 \_\_\_ Other: \_\_\_\_\_

**In what ways are Internal Audit Employees educated about Internal Controls?**

Check all that apply

Rank by Use

- |                          |  |                          |
|--------------------------|--|--------------------------|
| <input type="checkbox"/> | Self-Education (books, training manuals, etc.) | <input type="checkbox"/> |
| <input type="checkbox"/> | Classroom w/ teacher (when first hired)        | <input type="checkbox"/> |
| <input type="checkbox"/> | On-the-Job (as the situation arises)           | <input type="checkbox"/> |
| <input type="checkbox"/> | Expected to know prior to employment           | <input type="checkbox"/> |
| <input type="checkbox"/> | Ongoing Current Education                      | <input type="checkbox"/> |
|                          | Training Manuals/Videos                        | <input type="checkbox"/> |
|                          | Classroom w/ Teacher                           | <input type="checkbox"/> |
| <input type="checkbox"/> | Other: _____                                   | <input type="checkbox"/> |

**How would you rate the employees' knowledge about Internal Controls?**

No Knowledge    Poor    Fair    Good    Excellent

**How do employees view the I/A department?**

Adversary    Indifferent    Partners in Business

**How does middle management view the I/A department?**

Adversary    Indifferent    Partners in Business

**How does upper management view the I/A department?**

Adversary    Indifferent    Partners in Business

**How does the Board of Directors view the I/A department?**

Adversary    Indifferent    Partners in Business

**How do the I/A employees view their role in the company?**

Adversary    Indifferent    Partners in Business

## Questions for Non-Internal Audit Personnel

Does the company have an Internal Audit Department?

YES

NO

To what extent does each of the following provide a basis for determining 'quality' for the company:

	very influential	somewhat influential	limited influence	no influence
--Customer	4	3	2	1
--Upper Management	4	3	2	1
--Marketing	4	3	2	1
--Production Management	4	3	2	1
--Other: _____	4	3	2	1

To what extent does each of the following help to produce specific 'quality standards':

	very influential	somewhat influential	limited influence	no influence
--Customer	4	3	2	1
--Upper Management	4	3	2	1
--Marketing	4	3	2	1
--Production Management	4	3	2	1
--Other: _____	4	3	2	1

To what extent is each of the following relied upon to monitor the 'quality' of the company's product/service:

	very influential	somewhat influential	limited influence	no influence
--Customer	4	3	2	1
--Upper Management	4	3	2	1
--Marketing	4	3	2	1
--Production Management	4	3	2	1
--Other: _____	4	3	2	1

Does the Internal Audit Department (or its equivalent) get involved with vendor certification?

Never    Occasionally    Half the Time    Sometimes    Almost Always

Does each department approve the 'quality' level of its suppliers?

Never    Occasionally    Half the Time    Sometimes    Almost Always

Are non-Internal Audit employees ideas for improvement considered?

Never    Sometimes    Half the Time    Usually    Always

How are employees educated about Internal Controls?

Check all that apply

Rank by Use

- |                          |  |                          |
|--------------------------|--|--------------------------|
| <input type="checkbox"/> | Self-Education (books, training manuals, etc.) | <input type="checkbox"/> |
| <input type="checkbox"/> | Classroom w/ teacher (when first hired)        | <input type="checkbox"/> |
| <input type="checkbox"/> | On-the-Job (as the situation arises)           | <input type="checkbox"/> |
| <input type="checkbox"/> | Expected to know prior to employment           | <input type="checkbox"/> |
| <input type="checkbox"/> | Ongoing Current Education                      |                          |
|                          | Training Manuals/Videos                        | <input type="checkbox"/> |
|                          | Classroom w/ Teacher                           | <input type="checkbox"/> |
| <input type="checkbox"/> | Other: _____                                   | <input type="checkbox"/> |

How would you rate the employees' knowledge about Internal Controls?

No Knowledge    Poor    Fair    Good    Excellent

Of all of the reports and feedback provided by Internal Audit Department (or its equivalent) staff, what percentage are through formal organization channels and what percentage is through in formal reports or verbal communication?

Formal                    \_\_\_\_\_  
 Informal                \_\_\_\_\_

Is each department informed directly about Internal Audit recommendations?

Never    Sometimes    Half the Time    Usually    Always

Is each department responsible for determining whether or not to implement each recommendation?

Never    Sometimes    Half the Time    Usually    Always

Does Senior Management decide which recommendations to implement?

Never    Sometimes    Half the Time    Usually    Always

Does the Board of Directors decide which recommendations to implement?

Never    Sometimes    Half the Time    Usually    Always

Who is responsible for the actual implementation of an approved recommendation?

Internal    Department    Middle    Upper    Recommendation  
 Audit    Manager(s)    Management    Management    Maker

OTHER: \_\_\_\_\_

How would you classify the Board of Directors involvement with the company?

Non-existent    Disinterested    Indifferent    Active    Overpowering



How does middle management view the Internal Audit Department (or its equivalent)?

Adversary Indifferent Partners in Business

How do employees view the Internal Audit Department (or its equivalent)?

Adversary Indifferent Partners in Business

How does upper management view the Internal Audit Department (or its equivalent)?

Adversary Indifferent Partners in Business

How does the Board of Directors view the Internal Audit Department (or its equivalent)?

Adversary Indifferent Partners in Business

# ***APPENDIX***

## ***B***

**TO WHAT EXTENT DOES EACH OF THE FOLLOWING PROVIDE A BASIS FOR DETERMINING QUALITY FOR THE COMPANY?**

TABLE B-1

<i>Area of Company</i>	<i>Award Status</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>t Value</i>
Customer	Baldrige Winner	2.96	0.19	-1.89
	Non-winner	2.79	0.42	
Upper Management	Baldrige Winner	2.61	0.63	-1.58
	Non-winner	2.29	0.61	
Marketing	Baldrige Winner	1.85	0.82	0.54
	Non-winner	2.00	0.88	
Production Management	Baldrige Winner	2.49	0.58	-2.00
	Non-winner	2.00	0.96	

- \* Significance was at  $p < 0.05$
- \*\* Significance was at  $p < 0.01$
- \*\*\* Significance was at  $p < 0.001$

**TO WHAT EXTENT DOES EACH OF THE FOLLOWING HELP TO PRODUCE SPECIFIC 'QUALITY STANDARDS'?**

TABLE B-2

<i>Area of Company</i>	<i>Award Status</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>t Value</i>
Customer	Baldrige Winner	2.71	0.53	-2.34*
	Non-winner	2.29	0.61	
Upper Management	Baldrige Winner	2.18	0.82	1.00
	Non-winner	2.43	0.65	
Marketing	Baldrige Winner	1.71	0.85	0.53
	Non-winner	1.86	0.77	
Production Management	Baldrige Winner	2.39	0.83	0.13
	Non-winner	2.43	0.85	

- \* Significance was at  $p < 0.05$
- \*\* Significance was at  $p < 0.01$
- \*\*\* Significance was at  $p < 0.001$

**TO WHAT EXTENT IS EACH OF THE FOLLOWING RELIED UPON TO MONITOR THE 'QUALITY' OF THE COMPANY'S PRODUCT/SERVICE?**

TABLE B-3

<i>Area of Company</i>	<i>Award Status</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>t Value</i>
Customer	Baldrige Winner	2.64	0.56	-2.53*
	Non-winner	2.08	0.86	
Upper Management	Baldrige Winner	2.21	0.79	-1.11
	Non-winner	1.92	0.76	
Marketing	Baldrige Winner	1.68	1.09	-0.18
	Non-winner	1.62	0.87	
Production Management	Baldrige Winner	2.61	0.63	-1.4
	Non-winner	2.23	1.09	

- \* Significance was at  $p < 0.05$
- \*\* Significance was at  $p < 0.01$
- \*\*\* Significance was at  $p < 0.001$

## ARE NON I/A IDEAS FOR IMPROVEMENT CONSIDERED?

TABLE B-4

	Mean	Standard Deviation	t Value / p Value
Baldrige Winners	3.36	0.56	t = -1.34
Non-Winners	3.00	1.18	p = 0.187

## HOW THE INTERNAL AUDIT DEPARTMENT IS VIEWED BY VARIOUS AREAS OF THE COMPANY

TABLE B-5

Company Area	Award Status	Mean	Standard Deviation	t Value
All Employees	Baldrige Winner	1.73	0.46	-1.10
	Non-winner	1.50	0.54	
Middle Management	Baldrige Winner	1.81	0.40	-2.17*
	Non-winner	1.50	0.52	
Upper Management	Baldrige Winner	1.71	0.60	-1.79
	Non-winner	1.36	0.63	
Board of Directors	Baldrige Winner	1.89	0.32	-3.54***
	Non-winner	1.43	0.51	
Internal Audit Dept.	Baldrige Winner	1.96	0.19	-2.44*
	Non-winner	1.63	0.63	

\* Significance was at  $p < 0.05$

\*\* Significance was at  $p < 0.01$

\*\*\* Significance was at  $p < 0.001$

## HOW WOULD YOU CLASSIFY THE BOARD OF DIRECTORS INVOLVEMENT WITH THE COMPANY?

TABLE B-6

	Mean	Standard Deviation	t Value / p Value
Baldrige Winners	3.00	0.29	t = -3.78
Non-Winners	2.21	0.98	p = 0.001

# ***APPENDIX***

## ***C***

**FROM WHAT SOURCE(S) DO YOU OBTAIN NEW-HIRES FOR THE  
INTERNAL AUDIT DEPARTMENT?**

TABLE C-1

<i>Source of Internal Audit Staff</i>	<i>Award Status</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>t Value</i>
College Grads w/ accounting degrees	Baldrige Winner	2.50	0.92	4.41***
	<i>Non-winner</i>	0.93	0.54	
College Grads— non-accounting	Baldrige Winner	0.85	0.90	-1.12
	<i>Non-winner</i>	0.43	0.54	
Associate Degrees	Baldrige Winner	0.31	0.48	-0.22
	<i>Non-winner</i>	0.25	0.71	
Other Companies	Baldrige Winner	1.69	0.86	2.46*
	<i>Non-winner</i>	2.57	0.54	
Public Accounting	Baldrige Winner	2.43	0.51	-1.30
	<i>Non-winner</i>	2.14	0.38	
Within Company	Baldrige Winner	2.43	0.65	-4.83***
	<i>Non-winner</i>	1.14	0.38	

- \* Significance was at  $p < 0.05$
- \*\* Significance was at  $p < 0.01$
- \*\*\* Significance was at  $p < 0.001$

**WHEN EMPLOYEES LEAVE THE INTERNAL AUDIT DEPARTMENT,  
WHERE HAVE THEY GONE?**

TABLE C-2

<i>Destination of Internal Audit Staff</i>	<i>Award Status</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>t Value</i>
Financial Positions	Baldrige Winner	2.62	0.51	-1.41
	<i>Non-winner</i>	2.29	0.49	
General Accounting	Baldrige Winner	2.25	0.45	-1.28
	<i>Non-winner</i>	1.89	0.90	
Outside Companies	Baldrige Winner	1.09	0.54	3.93***
	<i>Non-winner</i>	2.29	0.76	

- \* Significance was at  $p < 0.05$
- \*\* Significance was at  $p < 0.01$
- \*\*\* Significance was at  $p < 0.001$

**WHEN I/A MAKES A RECOMMENDATION FOR IMPROVEMENT, WHAT PERCENTAGE OF THE TIME DOES MANAGEMENT LISTEN TO THE SUGGESTION?**

TABLE C-3

	<b>Mean</b>	<b>Standard Deviation</b>	<b>t Value / p Value</b>
Baldrige Winners	3.73	0.46	t = -4.45
Non-Winners	2.63	0.74	p = .000

**WHAT PERCENTAGE OF RECOMMENDATIONS ARE IMPLEMENTED?**

TABLE C-4

	<b>Mean</b>	<b>Standard Deviation</b>	<b>t Value / p Value</b>
Baldrige Winners	3.40	0.91	t = -3.49
Non-Winners	2.00	0.93	p = 0.002

**WHEN RECOMMENDATIONS ARE IMPLEMENTED, HOW OFTEN IS I/A INVOLVED IN THE IMPLEMENTATION?**

TABLE C-5

	<b>Mean</b>	<b>Standard Deviation</b>	<b>t Value / p Value</b>
Baldrige Winners	1.07	0.73	t = 3.82
Non-Winners	2.63	1.19	p = 0.001

**DURING OR AFTER IMPLEMENTATION, DOES I/A AUDIT THE EFFECTIVENESS OF THE RECOMMENDATION?**

TABLE C-6

	<b>Mean</b>	<b>Standard Deviation</b>	<b>t Value / p Value</b>
Baldrige Winners	2.27	1.03	t = 0.75
Non-Winners	2.63	1.19	p = 0.460

**OF ALL INTERNAL AUDIT REPORTS AND FEEDBACK, WHAT  
PERCENTAGE ARE THROUGH FORMAL ORGANIZATIONAL CHANNELS?**

*TABLE C-7*

	<b>Mean</b>	<b>Standard Deviation</b>	<b>t Value / p Value</b>
Baldrige Winners	81.86	17.33	t = -4.10
<i>Non-Winners</i>	50.00	32.08	p = .000



# ***APPENDIX***

## ***D***

**IS EACH DEPARTMENT INFORMED DIRECTLY ABOUT INTERNAL AUDIT  
RECOMMENDATIONS?**

*TABLE D-1*

	<b>Mean</b>	<b>Standard Deviation</b>	<b>t Value / p Value</b>
Baldrige Winners	3.58	0.67	t = -2.86
<i>Non-Winners</i>	2.33	1.21	p = 0.011

**IS EACH DEPARTMENT RESPONSIBLE FOR DETERMINING WHETHER OR  
NOT TO IMPLEMENT EACH RECOMMENDATION?**

*TABLE D-2*

	<b>Mean</b>	<b>Standard Deviation</b>	<b>t Value / p Value</b>
Baldrige Winners	2.75	1.36	t = 0.15
<i>Non-Winners</i>	2.83	0.41	p = 0.886

**DOES SENIOR MANAGEMENT DECIDE WHICH RECOMMENDATIONS TO  
IMPLEMENT?**

*TABLE D-3*

	<b>Mean</b>	<b>Standard Deviation</b>	<b>t Value / p Value</b>
Baldrige Winners	2.23	1.36	t = 0.72
<i>Non-Winners</i>	2.67	0.82	p = 0.482

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