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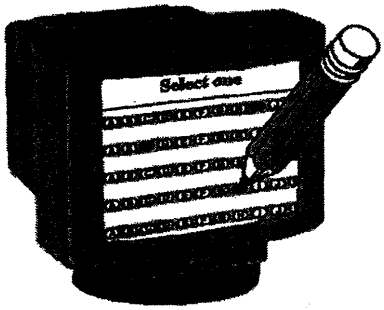
American Institute of Certified Public Accountants

Status Report
Briefing Paper No. 1

Conversion of the Uniform CPA Examination to a Computer-Based Examination



June 1999

Prepared by the Joint AICPA/NASBA
Computerization Implementation Committee

AICPA

AMERICAN INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS

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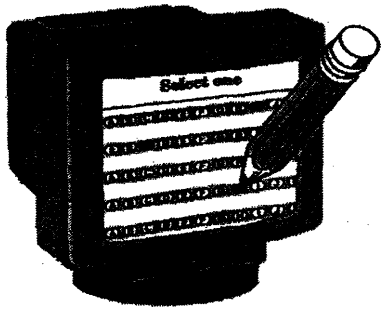

June 1999

Prepared by the Joint AICPA/NASBA
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INTRODUCTION

In October 1998, the Joint AICPA/NASBA Computerization Implementation Committee (CIC) issued *Briefing Paper No. 1—Conversion of the Uniform CPA Examination to a Computer-Based Examination.* The *Briefing Paper* provided an update and synopsis of the efforts underway in moving towards a computer-based Uniform CPA Examination, including a possible model for the examination.

The *Briefing Paper* described the proposed model for the examination in detail and asked recipients to evaluate the proposed model, which was composed of two sections. The first section, Fundamentals of Knowledge, consisted of multiple-choice questions for testing basic knowledge. The second section, Performance Assessment, suggested computer simulations to assess integrated knowledge and higher-level cognitive skills. The model was intended as a starting point from which changes and adaptations could be made.

The *Briefing Paper* was distributed to key constituencies, including:

- Members and administrators of boards of accountancy in all 54 jurisdictions.
- Educators.
- CPAs in public practice and business and industry.
- State CPA Societies.

The importance of ongoing involvement by these key constituencies was stressed throughout the document, as reflected in this statement from the Introduction:

> Nothing in this Briefing Paper is set in stone. Changes are invited, anticipated, and inevitable. Throughout the process of converting to a computer-based examination, the input of various interested parties will be crucial in ensuring that *the examination continues to do first and foremost what it has always done: protect the public interest.*[1]

To that end, the *Briefing Paper* included a questionnaire that invited comments on the proposed model, as well as on a variety of other issues related to the conversion to a computer-based examination. The following six questions were asked:

Question 1

Overall, to what degree do you believe the proposed computerized Uniform CPA Examination, as defined on Pages 3–9 of the *Briefing Paper*, is the best model for assessing the knowledge and skills required by newly-licensed CPAs to protect the public interest?

Question 2

Please provide what you believe to be the two greatest advantages and the two greatest disadvantages of this model to the Public, to Board Members, to Board Administrators, and to CPA Candidates.

Question 3

Do the examples presented in Computer Simulations 1 and 2 meet your expectations of the concept of a simulation for the computer-based examination?

Question 4

Do you have any questions about the proposed computer-based examination that this *Briefing Paper* did not answer to your satisfaction?

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1 Joint AICPA/NASBA Computerization Implementation Committee, *Briefing Paper No. 1—Conversion of the Uniform CPA Examination to a Computer-Based Examination* (AICPA, 1998), p. 2.

Question 5

Do you have any suggestions for topics that you would like to see covered in future *Briefing Papers* dealing with the computerized Uniform CPA Examination?

Question 6

Additional comments and suggestions

Seventy responses to the questionnaires were received, reflecting the views of the examination's various constituencies. The balance of this *Status Report* will:

- Summarize key issues raised by the respondents.
- Highlight upcoming initiatives that both address those issues and move the computerization process forward.

KEY FINDINGS

Seventy responses to the *Briefing Paper* questionnaire were received. Of the 70, 11 responses represented the consensus of boards of accountancy; 19 represented responses from individual board of accountancy members and administrators; and 40 represented other interested parties, including CPAs in public practice, industry, and education.

Overall, there was consensus that the project is feasible and that computerization should move forward. However, there were concerns that the current design may not be optimal and that some of the assumptions on which the proposed model is based need to be further analyzed, empirically tested, and modified, if appropriate.

While 67% of all respondents rated the proposed model as very good or the best model, only 53% of the boards of accountancy and their individual members and administrators rated the model as very good. Thus, they were not as supportive as CPAs in public practice, industry, and education. Three boards felt they could not respond until they had additional information. Nonetheless, while boards had greater concern with the proposed model than did other respondents, overall they too were in favor of conversion to a computer-based examination.

Issues and concerns pinpointed by the respondents included:

- Costs of completing the project.
- Potential costs to candidates.
- Variable-length vs. fixed-length testing.
- Length and complexity of simulations.
- Breadth and depth of examination content.
- Need for computer literacy by candidates.
- Examination security.

The *Briefing Paper* responses also revealed three areas in which a number of recipients held misconceptions regarding a computer-based model:

1. Diagnostics

Respondents in some cases believed that candidates would not receive diagnostic information in a computerized examination environment. That is not the case. Whatever ultimate shape and form the examination takes, relevant diagnostics will be provided.

2. Skills Testing

Some respondents expressed a concern that communication and other skills would not be tested under the proposed model. In fact, one of the objectives of the problem-solving/simulation portion of the examination is to test higher-level cognitive skills, such as communications, research, and analytical abilities.

3. Consistent Level of Difficulty

There seemed to be a concern that computerization would in some way make the examination easier and so diminish its perceived validity. Also expressed was concern that computerization would lead to a more difficult examination. It is the intention of all involved in the computerization process to maintain the current level of difficulty.

For a detailed discussion of the responses to the *Briefing Paper*, see Appendix 1.

The CIC is committed to addressing the concerns that have emerged from the *Briefing Paper* and to updating and improving the proposed model so it becomes the best model for protecting the public interest in the next century. The next section pinpoints the major initiatives that will be undertaken during the next 12 to 18 months to accomplish that objective.

MAJOR INITIATIVES

The CIC understands that the endorsement to move forward with computerization brings with it a requirement to adapt and modify the proposed model. Many issues have been identified that need to be dealt with and resolved satisfactorily. To that end, the CIC will proceed in a systematic and empirically appropriate fashion to investigate and collect data to address the issues that have been identified. Based on the findings, the CIC will then evaluate, revise, and adapt the examination model accordingly, with the costs to boards and candidates being a key factor in all aspects of the CIC's decision-making process. However, as always, protecting the public interest will be given the greatest weight in the formulation of a computer-based examination.

Four key initiatives are currently planned:

1. Examination Structure

Respondents to the *Briefing Paper* expressed concerns regarding both variable-length objective tests and simulations.

With respect to **objective questions**, the CIC will embark on a full-scale investigation of alternative approaches, including detailed assessments of both fixed-length and variable-length formats. In a fixed-length testing environment, all candidates are given the same number of questions to answer. In a variable-length test, however, different candidates may be administered different numbers of questions. The number of questions administered is contingent on a candidate's responses to the previous questions. This may cause a misperception among candidates and other constituencies that the shorter examination is easier, harder, or unfair to certain candidates.

As for **simulations**, there is concern that the simulation examples presented in the *Briefing Paper* were too long to achieve the primary purpose of testing integrated knowledge and higher-level cognitive skills. Consequently, the CIC will be investigating shortening some of the individual simulations to 40–45 minutes, rather than 1½ hours or longer. The goal would remain the same: to test higher-level, integrated knowledge and skills. However, shorter, less complicated simulations would allow time to test more areas and would likely have more desirable psychometric properties.

Once appropriate models have been established for objective question formats and simulations, each will be pilot-tested.

2. Examination Content

To determine the content of the examination, the CIC will rely on the proven Practice Analysis methodology. Since the early 1980s, the AICPA Board of Examiners has emphasized this approach. Using a number of research methodologies, including focus groups and surveys of practicing CPAs, the Practice Analysis ensures the examination focuses on important real-world skills and competencies for entry-level CPAs by ascertaining the:

- Types of engagements to which entry-level CPAs devote most of their time.
- Work activities and specific tasks involved in those engagements.
- Knowledge and skills required to carry out those activities and tasks.

The Practice Analysis, to be completed by May 2000, will cover the breadth and depth of entry-level knowledge and skills.

3. Policies and Procedures

The CIC believes that policy issues such as conditioning, retake, security, appeals, and transitional candidates cannot and should not be answered in a vacuum. The CIC has, therefore, engaged in a program of bringing together members and administrators of boards of accountancy and other key parties involved in the examination to discuss issues and strategies. One of these Issue Forums covering the area of conditioned candidates has already been held. The CIC intends to continue to convene forums throughout the transition process so that regulators and others who are affected by examination policies and procedures will be involved in their formulation.

4. Legislative

The thrust of this effort centers on helping the 54 jurisdictions that administer the Uniform CPA Examination to update their statutes to provide for computer-based testing.

The CIC believes that the Uniform Accountancy Act is key to expediting the legislative approval process and has drafted language for the Act that will allow for a computerized examination. The proposed language may be adapted for use by all jurisdictions.

Submission of the proposed language to the UAA approval process is slated for Spring of 1999.

CONCLUSION

After evaluating the responses to *Briefing Paper No. 1—Conversion of the Uniform CPA Examination to a Computer-Based Examination*, the CIC has concluded that there is sufficient support for continuing the process of designing a viable computer-based model for the Uniform CPA Examination.

At the same time, the Committee acknowledges that, based on the input received, it must revisit its assumptions and embark on further research and development regarding examination content and structure, as well as the policies and procedures surrounding the computer-based examination and its administration.

The road to a computer-based examination is not an easy one, and not one the CIC can travel alone. The help and advice of all interested parties is essential for success. As a result, the CIC has an ongoing commitment to inform, involve, and mobilize key stakeholders and will use a variety of communications vehicles to do so, including briefing papers, telephone surveys, issue forums, white papers, meetings, seminars, and one-on-one discussions.

The CIC firmly believes a computerized examination, backed by the endorsement and involvement of key constituencies, will better serve the public interest by embracing the best of technology to test real-world, entry-level knowledge and skills.

APPENDIX 1

SUMMARY OF RESPONSES TO *BRIEFING PAPER NO. 1*

RESPONDENT PROFILE

Consensus of State Board	11
State Board Administrator	6
Individual Member of Board of Accountancy	13
Member of NASBA	4
CPA	46
Public Practice	33
Business or Industry	7
Educator	12
Other	27

Since respondents were asked to check all the categories that applied to them, the Respondent Profile total is significantly higher than the number of respondents (70). For analytical purposes, the title filled in by the respondent dictated the category in which his or her responses to Questions 1 and 3 were tabulated. For example, a respondent who indicated Board Member as a title, but also checked off CPA and Public Practice, would be counted only as a Board Member.

OVERVIEW OF RESPONSES

The CIC received 70 questionnaires, letters, and e-mails responding to the *Briefing Paper*:

- 11 responses represented the consensus of state boards of accountancy.
- 19 came from individual members of state boards, state board administrators, and NASBA board members.
- 40 responses represented the views of the CPA profession, including CPAs in public practice, education, and industry and state CPA society directors.

The responses indicate that respondents support moving forward with the process of converting to a computer-based examination. The following synopsis provides a question-by-question numerical breakout of the responses as well as a summary of the most common issues, comments, and observations.

***Question 1*—Overall, to what degree do you believe the proposed computerized Uniform CPA Examination, as defined on Pages 3–9 of the *Briefing Paper*, is the best model for assessing the knowledge and skills required by newly-licensed CPAs to protect the public interest?**

	BOAs	Board Members & Administrators	CPA Profession	Total
The best model	0	0	4	4
A very good model	4	12	27	43
Not sure	2	4	2	8
Not a very good model	2	1	1	4
An unacceptable model	0	1	1	2
Too soon to comment or no answer	3	1	5	9
TOTAL	**11**	**19**	**40**	**70**

Forty-seven of the respondents (67%) believed that the proposed model was a very good model or the best model. The degree of support, however, varied widely among constituencies. Only 4 of 11 boards, or approximately 36%, were in favor of the proposed model. Board members and administrators had similar responses and were far more favorably disposed, with 63% favoring the model. CPAs in public practice gave the model an overwhelming endorsement, with 24 of 25 (96%) rating it very good or the best. Three of the five CPAs in education rated the model as very good, while only one of the three CPAs in industry gave the model a very good rating.

The clear majority of the respondents, whether or not they favored the proposed model, were in favor of moving towards a computer-based examination.

ISSUES AND CONCERNS MENTIONED MOST FREQUENTLY

- Some respondents indicated concern with a pass/fail grading methodology in that it would not provide enough information to gauge candidate performance. Therefore, they supported continuing the present numerical grading system.
- A number of respondents expressed serious concerns that the computerized examination would not test communication skills, which they believe are necessary to practice competently.
- The issue of variable-length testing versus fixed-length testing for the objective portion of the examination was brought up by some respondents. They said that a variable-length test may be perceived as not being fair to all candidates, since different candidates may be administered different numbers of questions. Fewer questions could be perceived as constituting an easier, harder, or otherwise unfair examination.
- Some respondents expressed concern that there may be a perception that a computerized examination is not as rigorous as a paper-and-pencil test. One reason for this concern was the capability for candidates in a computerized environment to use on-line research to determine an answer.

***Question 2*—Please provide what you believe to be the two greatest advantages and the two greatest disadvantages of this model to the Public, to Board Members, to Board Administrators, and to CPA Candidates.**

The following chart indicates the most frequent responses:

TWO KEY ADVANTAGES	TWO KEY DISADVANTAGES
Public	**Public**
• Better way of testing knowledge and performance.	• Lack of testing for written communication skills.
• Quick feedback.	• Security of the proposed examination.
Board Members	**Board Members**
• Greater assurance that candidate is qualified.	• Loss of some control over the process.
• No need for large sites.	• May be costly to implement.
Board Administrators	**Board Administrators**
• Easier administration and timely grade reporting.	• Can't really distinguish between good and bad candidates.
• Grade consistency and equality.	• Will profession believe that a computer-based test is most appropriate indicator of initial competence?
CPA Candidates	**CPA Candidates**
• Easier scheduling.	• Need for computer literacy by candidates.
• Faster grade reporting.	• Cost of examination will increase.

ADDITIONAL COMMENTS

Public

Advantages

- Computer literacy is stressed, which is something the public expects.
- CPA profession changing to meet public needs.
- Perhaps increase the number of CPAs licensed per year.
- There should be an increase in the aggregate productive time of staff to firms.

Disadvantages

- Perception that a paper-and-pencil examination is harder or better.
- Going from 4 to 2 parts may leave out critical items.
- School curriculums will have to change to better reflect skills needed to take the test.

Board Members

Advantages

- Will provide for a better distribution of work throughout the year.
- Reduce subjectivity in grading.
- Members won't have to spend four days a year acting as proctors and traveling to examination sites.
- Easy to sell to the legislature.

Disadvantages

- Will deal with more complaints.
- A fundamental change.
- Reviewing a candidate's qualifications on an ongoing basis rather than twice a year.
- Preference for numerical grading.

Board Administrators

Advantages

- Less bickering over marginal grades.

Disadvantages

- Tracking candidates (interstate movement).
- Rule modifications.
- May require more staffing year-round.

CPA Candidates

Advantages

- May reduce the lag-time between candidates' graduation and their first opportunity to sit for the examination.
- May not need to spend as many hours taking the examination if they are well prepared (or if they're poorly prepared).

Disadvantages

- Candidates no longer able to implement a strategy to pass a subject area (sections) and retain credit.
- Transitioning from one type of examination to another may be hard for some.
- Appointments may fill up (especially in larger states). Consequently, unable to take examination when desired.
- Fewer candidates may pass a more complex examination.

***Question 3*—Do the examples presented in Computer Simulations 1 and 2 meet your expectations of the concept of a simulation for the computer-based examination?**

	BOAs	Board Members & Administrators	CPA Profession	Total
Surpass expectations	0	2	7	9
Meet expectations	3	9	17	29
Not sure	2	2	8	12
Do not meet expectations	3	4	1	8
Too soon to comment or no answer	3	2	7	12
TOTAL	**11**	**19**	**40**	**70**

As with Question 1, degrees of support varied across constituencies. Only 27% of the boards of accountancy indicated support for the simulations described in the *Briefing Paper*. Board members and administrators had similar responses and gave the simulations a significantly higher approval rate of 58%. Once again, the greatest supporters were CPAs in public practice with an approval rate of 72% (18 of 25).

ISSUES AND CONCERNS MENTIONED MOST FREQUENTLY

- Respondents generally believed that the simulations depicted in the proposed model were too lengthy and did not adequately test integrated knowledge and higher-level skills. They suggested developing simulations that were shorter in length but tested a broader range of knowledge and skills.
- A number of respondents said the proposed simulations did not incorporate enough free responses by candidates and that there was too much computer prompting, making it easier for candidates to answer correctly. They suggested building in more free-response answers to provide candidates with the maximum opportunity to demonstrate their skills.
- Grading methodology for simulations was another frequently mentioned issue, with concerns about the method and consistency of grading. Specifically, respondents inquired whether the simulations would be manually graded and if pass/fail would be the grading criterion.

***Question 4*—Do you have any questions about the proposed computer-based examination that this *Briefing Paper* did not answer to your satisfaction?**

***Question 5*—Do you have any suggestions for topics that you would like to see covered in future *Briefing Papers* dealing with the computerized Uniform CPA Examination?**

Since responses to Questions 4 and 5 followed the same pattern, they have been grouped together.

ISSUES AND CONCERNS MENTIONED MOST FREQUENTLY

- Cost was the most frequently mentioned concern, both in terms of the cost required to complete the conversion and the cost to candidates to take the examination.
- Security was another frequently mentioned issue. One concern was that hackers may somehow break into the system and compromise the examination. Respondents repeatedly mentioned the need to have tight controls in place. Another concern was on-site security at examination sites. Here, respondents expressed the possible need for a greater number of proctors during the examination.
- Respondents expressed some concern about whether diagnostics would be provided to candidates. They reiterated the importance of this feature and urged that it not be eliminated in any computer-based test since it provides useful information for repeat candidates.
- Some transition issues were mentioned. Respondents were concerned whether the conversion process would be phased in or one-step. They also raised the issue of conditioned candidates and how they would be handled.
- Examination content was an area that elicited questions from many respondents. They wanted more details and the percentages each area would represent on a computer-based test.

Question 6—Additional comments and suggestions

Most respondents did not have any additional comments or suggestions. Those who did tended mostly to reiterate support for moving forward with computerization or to repeat issues and concerns discussed in previous answers.