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# **Discussant's Response to "AUDITOR'S ASSISTANT: A Knowledge Engineering Tool for Audit Decisions"**

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There is much about this article that I like. The focus of this article is on the development of an expert system designed to help the field auditor make more efficient decisions about the level of audit testing required. Both these topics are high on the list of priorities of all of the national accounting firms. A significant portion of the budgets of most major firms is being directed toward the development of personal computer-based expert systems to increase audit efficiency.

The authors recognize the need for the active interaction of the field auditor in the use of an expert system. Too many articles fail to give proper credit to the level of knowledge which resides in the audit engagement team. Firms attempt to keep turnover at the partner, manager and senior levels to a minimum. As a result, audit engagements are frequently staffed by an engagement team with ten or eleven years of total client experience. I believe this paper attempts to give proper recognition to the benefits to be gained by tapping into that experience. The authors stress the importance of understanding the client's business environment. In our firm's approach, we list "Understanding the Business" as the first step of the business review. Although this differs slightly from the authors' "understanding the client's business environment," I believe they both recognize this area as the first and most important step in an audit.

The article is also one of the few which focus on the audit team and the decisions which must be made by that audit team. We need more articles on and research in this important area of audit practice.

Unfortunately, I believe that my negative comments outweigh my positive comments. In summary, I do not believe that the authors are on the right track yet. My general impression of the knowledge engineering tool described in the paper is that it will not be widely endorsed in practice and it may be flawed in theory.

In my view, some of the fatal theoretical flaws of the tool involve a failure to appreciate the complexity of the audit process. Individual pieces of audit evidence frequently impact more than one assertion, and indeed may impact other areas or the entire audit. For example, one piece of audit evidence which indicts the integrity of management may lead either to a qualification or a disclaimer of opinion.

In addition, I do not believe that the authors' system, as described in this paper, gives enough weight to the importance and interaction of individual audit procedures. In Scenario One, the authors indicate revision of the nar from 0.83

to 0.92 based upon discussions with the credit manager on collectibility problems. As a result of this increase, an additional audit procedure which had been planned is not performed. This is even more distressing as the paper does not discuss whether or not any objective evidence other than discussions was used to put the team over the target level of 0.90.

The additional audit procedure not performed is a review of ABC's credit policy. There have been so many instances of audit problems created by changes in a company's credit policy that not to perform such a basic procedure would lead me to question whether the engagement team had obtained an understanding of the business.

From a practical point of view, this type of question would generally not represent any significant time savings. The engagement team did have access to the credit manager. How much longer would the conversation have lasted if the team had asked the credit manager if there were any changes in credit policy? The only way this could represent a significant time savings would be if there had been significant changes in policy. In that case, time savings should not be the driving force because a radical change in credit policy could mean a significant increase in potential uncollectible accounts. This could be true without regard to whether or not the accounts are over 120 days past due.

Also in Scenario One, "the audit team finds the management and accounting personnel to be competent and trustworthy and decides that this evidence supports nar to degree 0.60." Where are the SAS 47 [AICPA, 1983] concepts of inherent and control risk in the authors' equation? I am sure we have all dealt with competent and trustworthy accounting personnel who, because of the existence of significant inherent risk, delivered to the auditors an accounts receivable section which contained a material error. This has frequently been the case where the industry has experienced rapid change such as the oil and gas industry or the savings and loan industry. By neglecting to assess the risk that the balance contains errors that could be material to the financial statements, the authors' belief functions could also be misstated. The article states "the audit team also knows that the maximum risk that nar is materially misstated is only 8%." This would appear to be a very bold statement, given the fact that the allowance for doubtful accounts has not been reviewed. However, even if this statement were true, SAS 39 [AICPA, 1981] would appear to set the limit of audit risk at about 0.05.

The authors appear to either ignore, or fail to understand, the practical role of an audit program. One of the authors' statements is that "at any stage of the audit the auditor has to decide which procedures he or she is going to perform next." This question is generally answered, in practice, by the audit program. The authors' statement that the decision on what to do is taking place during the performance of the audit is simply not true for most audit engagements.

AU Section 311.05 states that "the author should prepare a written audit program (or a set of written audit programs)." The audit programs are generally prepared during the planning stage of an engagement. The auditing literature also states that "as the examination progresses, changed conditions may make it necessary to modify the planned audit procedures." I assume that the elimination of planned audit procedures, as a result of changes in the actual versus planned strength of audit evidence represents the core of the authors' "engineering tool."

However, in an actual audit, I believe there would be significant practical problems with the system described by the authors. The system generally requires an assignment of degrees of support to each piece of audit evidence by the audit team. The audit team is described as comprising the audit senior, manager and partner. I know of no present audit engagements which require this much team decision making. On most medium-sized audit engagements, the audit team is not together on a daily basis, or even a weekly basis. Most decisions on the extent of audit procedures are made during the planning and review stages of the engagement. While I agree with the authors that this may lead to a slight degree of overauditing for new clients, for old established clients or for clients in specialized industries, there is probably very little overauditing. There is certainly not enough overauditing to justify the system described in this paper.

Additional comments concerning the "automation of evaluation of evidence" also trouble me. I believe that the degree to which we remove the auditor from the active association with the evaluation of evidence we create audit risk. It is great to see that each piece of evidence, gathered mathematically, increases our degree of confidence. However, such techniques may create the "halo" effect that has been noted in previous academic studies. How questioning will an auditor be if he is examining a piece of audit evidence when his nar equals 0.80? Will he still have the same degree of professional skepticism required?

Many firms presently require an auditor to sign off each program step as it is completed. Each step is separate and distinct, and represents a concrete individual audit unit. Although I recognize that some of the steps give us more audit comfort, each step is important and generally must be performed diligently.

In the paper, statements are made concerning analytical review, client inquiries and confirmation procedures that are very judgmental and unsupported. SAS No. 56, dated April 1988, will require the application of analytical procedures in the planning and overall review stages of all audits [AICPA, 1988]. The required use of analytical procedures was also recommended in the report by the National Commission on Fraudulent Financial Reporting in October 1987. Client inquiries and confirmations vary in effectiveness depending upon the circumstances of the individual client.

Another practical problem created by this article is illustrated by the comment: "The team having reviewed the staff's work makes a judgment that the confirmation provides a 90 percent degree of support for validity and an 85 percent degree of support for the valuation objective." The paper does not address how a team would be able to distinguish such a fine degree of percentage support for each objective. I believe such a fine distinction would not be possible in practice.

Scenario Two provides even more examples of impractical mathematical calculations. In Scenario Two, the engagement team believes that the allowance for bad debts may be understated. They discuss the situation with the credit manager, who also agrees with the assessment that the allowance may be understated. Based upon this information, the support is calculated at 0.80. In my experience, if the client were to agree with the auditor's assessment,

the support would be much higher than 0.80. Clients generally do *not* agree unless there is a problem.

In summary, I believe that the system described in this article will not be practicable. The team concept envisioned by this article is not a workable concept in practice. The system basically ignores the role of the audit program in an audit process and the requirement for preparation of such a program during the planning phase of an engagement. Finally, the system provides far too many chances for an aggressive litigation counsel to question the firm's judgment in the event of an audit failure, and does very little to prevent such a failure.

## **References**

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