A prototype system for temporal reconstruction of financial accounting standards

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Abstract

This paper presents a prototype system to support the temporal reconstruction of financial accounting standards (FASs). The FASs have been subject to rapid expansion, increased complexity and frequent changes (amendments), which in combination make it difficult to determine the accurate rendering of FASs at specific points in time. The prototype allows a user to specify an FAS (e.g., SFAS 35) along with a date. In return, the system presents the user with an FAS that has been reconstructed to incorporate all amendments subsequent to the issuance of the original FAS, but as of the user specified date. The prototype, in effect, permits the dynamic and continuing codification of a particular FAS. Accounting principles must be applied to specific accounting problems that exist at specific points in time. This prototype enables the user to quickly determine the complete status of an FAS as of a user determined date.
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1. Introduction and background

1.1. Overview

This paper presents a prototype system for the temporal reconstruction of financial accounting standards, generally referred to as the Generally Accepted Accounting Principles, and hereafter collectively referred to as the FASs. This research follows the paradigm of design science, first articulated by Simon (1996) in 1969, and most recently re-published in 1996, as the science of the artificial focused on the design and the construction of artifacts that can be used to improve practice. More specifically, this research is an example of what March and Smith (1995) describe

as prescriptive research in that it attempts to facilitate the temporal reconstruction of FASs by providing a working prototype.

The system allows a user to enter an FAS (e.g., Statement of Financial Accounting Standard or SFAS 35) along with a date. In return, the system presents the user with an FAS that incorporates all amendments subsequent to the issuance of the original FAS, but as of the user specified date. The system, in effect, permits the dynamic and continuing codification of a particular FAS. Accounting principles must be applied to specific accounting problems that exist at specific points in time. This system enables the user to quickly determine the complete status of an FAS as of a user determined date.

The prototype transforms what is now a potentially laborious manual task into one that can be completed by simply entering an FAS type-number and a date, two quick typing operations. In contrast, to manually reconstruct an FAS the user must: (1) locate the FAS to be recon-structed (either in the print volume of the official pronouncements, the CD-ROM version, or online at the FASB website), (2) inspect the status page to determine the number of applicable amendments, (3) locate each amendment in the amending standard, (4) read the amendment, (5) refer back to the language being amended in the original FAS, and, finally, (6) make the language change. Operations three through six must be repeated for each applicable amendment. In the case of multiple amendments of the same portion of an FAS, the task is complicated by the fact that the second amendment often amends the first amendment. Likewise, the third or fourth amendment often amends the second. This requires the user to meticulously track the series of changes, apply the changes sequentially and carefully note the final version. Only amendments effective as of or before the reconstruction date must be considered.

The manual task requires a careful attention to detail. The complexity of the task is exacerbated when an FAS has been amended many times. If the reconstruction is interrupted, the task may need to be repeated. Automation of the reconstruction task offers the advantages of speed and convenience, but even more importantly, a correctly automated task will execute with consistent accuracy. Accuracy is significant because the application of an incorrect version of an FAS to an accounting problem carries potential legal consequences for both accounting practitioners as well as their clients.

David et. al. (2002) offer three criteria for the evaluation of design science as research: (1) is the research truly novel, (2) is the problem easy or difficult and (3) is there already a proof of concept? Temporal reconstruction of FASs has never before been addressed on an automated or any other basis. The research cited (in section two), from the domains of law and computer science, clearly establishes that temporally reconstructing text documents is a difficult problem and that no clear best generalized solution has been identified. Finally, no proof of concept exists for the temporal reconstruction of FASs. Thus, it is maintained that the work to follow presents a novel proof of concept for a difficult problem thereby contributing to the body of design science literature in the accounting domain.

1.2. Motivation

The rapid and continued expansion of the FASs literature, in terms of both the number and the length of individual FASs, has imposed excessive difficulty upon accountants in navigating and applying the FASs. The AICPA cited the "rapid change in and expansion of performance and reporting standards" in accounting as one factor contributing to their creation of a *Special Task Force on Standards Overload* (Burke, 1997). The Special Task Force recommended the