

Twenty-First Century Assurance

Robert K. Elliott

SUMMARY

Every aspect of the accounting profession is being pervasively affected by advances in information technology (IT). IT shifts power from producers (such as accountants and auditors) to consumers (such as investors, creditors, and other information users). Present and potential users of accounting and auditing services have increasing needs for relevant, reliable, and timely information, and IT provides the means to meet them. But responding to these needs will require changes in virtually every aspect of auditing—where it is applied and how it is produced and distributed, for example, as well as the profession's relations with assurance users. This article explores some of the principal changes in the audit paradigm that will be necessary in order to meet assurance-user needs in the future.

Keywords: continuous assurance; insurance; independence; fraud; XBRL; user pays.

The future of assurance services lies in trends underway and the profession's interaction with its evolving environment. Assurance technology will progress by adaptation and creativity, perhaps achieving a new service model. This article will explore these possibilities, starting with those nearer to realization and moving on to those now at a greater distance.

A comparison between the historical assurance service, the audit, and future assurance services for business reporting is summarized in Figure 1. The frequency of service delivery changes from annual to continuous. The traditional opinion on financial statements broadens to assurance on information chosen by the user, and, as explained below, the notion of assurance would also apply to information elements much narrower than the financial statements taken as a whole. The information need not be financial statements, and it need not even be financial. The future users are decision makers, not just investors and creditors, as has been the case with the financial statement audit. Because information technology permits relatively reliable (i.e., error-free) preparation of reports, detecting fraud will receive greater attention in proportion to that given to detecting errors. New models might lead to fees being paid by the decision makers and might transform the notion that independence, as it has traditionally been conceived, is required to perform the service. The characteristics of future assurance services are discussed more fully in the sections that follow.

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FIGURE 1
Comparison of Historical and Future Assurance Services

Historical Service	Future Service
Annual	Continuous
Opinion	Assurance
On financial statements	On user-chosen information
For investors and creditors	For decision makers
Error focus	Fraud focus
Auditee pays	User pays?
Independence	Independence?

CONTINUOUS REPORTING

Continuous reporting means making digitized information available through electronic channels simultaneously with its creation. To the extent that automated sensors create digitized data about business activities concurrent with those activities, continuous reporting means real-time reporting. To the extent that information about business activities is digitized later (for example, through human intervention), continuous reporting means availability through electronic channels immediately upon digitization. Such information does not change continuously, but it is continuously the freshest digital information available.

The conditions for real-time financial reporting are moving toward critical mass:

1. Corporations must be internally networked with hardware and software that can record, process, and report business results in near real-time.
2. The same corporations must have publicly available electronic dissemination channels, e.g., web sites.
3. Information must be disseminated in accordance with standardized information specifications that facilitate capital suppliers' access to, and acquisition and analysis of, the information.

There has been remarkable progress on each of these conditions. Internally networked firms are commonplace. Enterprise-wide software in networked organizations already permits some firms to report—at least internally—in near real time. Cisco Systems, for example, can close its books in a few hours. Corporate web sites are proliferating, partly because they are so frequently used to conduct electronic business. With respect to the third condition, a new specification called XBRL (eXtensible Business Reporting Language, an extension of XML) has been created for electronic business reporting.¹

XBRL, the work of a consortium originating from an AICPA initiative, makes it easier to prepare, publish, exchange, acquire, and analyze accounting and business-related information. It makes it easier to transfer financial-reporting information between computer applications, and this will greatly multiply the usefulness of the information. XBRL eliminates the need to key in needed data presented in unstandardized, context-free, and thus difficult-to-use, formats such as HTML documents or downloadable Excel (xls) or Adobe Acrobat (pdf) files. Keying in the data from these formats is labor intensive and courts a substantial risk of both interpretation and transcription errors.

¹ For more on XBRL, see <http://www.xbrl.org>

Meanwhile, the SEC has adopted Regulation FD, which requires that disclosures be made available to all investors at the same time, not just to a favored set of analysts who meet with management. Reports on a corporate web site are available simultaneously to all interested parties. Thus, Regulation FD adds to the rationale for communicating business information promptly over the Internet.

In addition, there is growing awareness that real-time reporting may reduce market volatility and a greater appreciation that richer disclosure helps reduce the cost of capital. Real-time reporting should reduce, if not eliminate, the drama and effect of quarterly earnings surprises. Declines in reported earnings will not be so sudden, because the increments that make up the quarterly surprise will have been digested and the trends that lead to the quarterly number will have been assessed. Looked at another way, there will be fewer surprises because the reporting will have caught up to the pace of change in the business world. Changes in corporate operations of interest to investors do not occur only annually or even only quarterly. There has for some time been an obvious need for more frequent corporate reporting.

As for cost of capital, Botosan (1997) has provided empirical evidence of the advantages of richer disclosure, confirming what is intuitive. Corporations have been aware for decades that good relationships with investors are a part of effective financial policy. Good relationships depend on reporting information pertinent to investors' financial interests. Business executives considering disclosure can have valid concerns about potential competitive disadvantage, the cost of developing the information, and the risk of liability from its dissemination. But the cost-benefit trade-offs need not be forbidding, especially if the SEC would provide the safe harbor of reduced liability risk for disclosures emanating from systems that received clean auditors' reports on, for example, their security, availability, integrity, and maintainability.

After continuous financial reporting comes the next generation of business reporting: investor access to corporate databases. The same incentives propelling real-time financial reports will drive this newer form. The key source of investor information will be databases developed and maintained for managerial use. Corporations will open selected aspects of these databases to the public. The selection process will screen out whatever presents too great a risk of competitive disadvantage. There will be little additional cost to develop and maintain the data itself, because the data would be in place for managerial use even if outside parties had no access.

In this communication model, investors would access the databases over the Internet and would be able to specify the information they require and the format in which it is presented. Some sophisticated investors would develop their own analytical and interpretive software, but more would probably purchase off-the-shelf or customized software. Less sophisticated investors would rely on analyses from intermediaries, just as they do today. Investors and creditors would access different databases and would develop different reports as they saw fit. Today's GAAP is intended to produce general purpose, standardized financial statements, and much of the FASB's effort goes into the design of such statements. However, when users can access what they need and display it in the formats most relevant to their particular decision problems, they will not need "general purpose financial statements." What we think of as GAAP today would then be devoted largely to specifying common data definitions and the minimum set of data elements that must be produced and made available by enterprises.

CONTINUOUS ASSURANCE

The advantages of electronic business reporting will provide a market for—indeed, the necessity of—continuous assurance. It will create demand the same way that demand was created for the early audit of financial statements. In every transaction, there is a flow of information from the seller to the buyer. No one can buy what is unknown, and the more that is known about the potential purchase, the better the buyer's ability to determine an acceptable price. Inaccurate or otherwise misleading information would prevent the buyer from achieving this objective. The buyer therefore always has an interest in knowing whether the information supplied by the seller is reliable.

Advances in audit technology will recreate the audit of financial statements produced by computerized systems. Audit tools will be computerized and will embed learning from the results of applying past, and even contemporaneous, procedures. These systems will be networked across all audits performed by the assurance firm, perhaps even extending to assurance firms allied to improve audit effectiveness, and in the ideal reaching to all firms providing assurance. Audit software will model businesses to predict how their business reports should depict them, and the predictions will be compared to the company's business reports to search for variances that call for investigative procedures. Intelligent software agents and sensors will enable real-time audit procedures.

I have described elsewhere in more detail these kinds of technological advances and some of the research necessary to bring many of them to fruition (Elliott 1995, 1997). I want to add to them the concept of a web of assurance. The ubiquity of the Internet and electronic business will allow verifying the consistency of related data stored by the parties to exchanges. Every sale (purchase) will show up as some other company's or individual's purchase (sale). The counterpart information can be used to check the target company's (and possibly individual's) internal information. It is an extended, electronic version of the old confirmation process that will make possible a new interconnected assurance, assurance that covers the entire business world and, ultimately, all the transactions in which it engages.

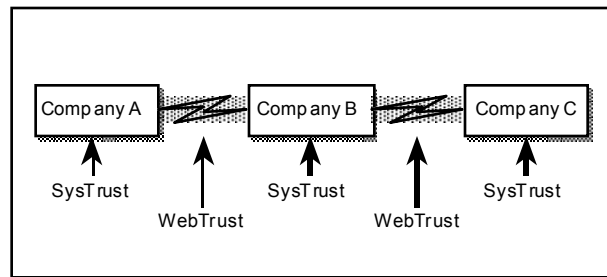
In order to imagine this possibility, consider SysTrust and WebTrust, two assurance services recently developed jointly by the AICPA and CICA. A SysTrust examination encompasses the security, integrity, availability, and maintainability of an information system.² WebTrust applies to electronic commerce—either business-to-consumer (B2C) or business-to-business (B2B). A full WebTrust examination covers security, availability, business practices, and transaction integrity.³ If every company received both SysTrust and WebTrust examinations, and verification of reciprocal consistency were universally deployed, then the scope of assurance would cover the entire business world. Transactions could take place with renewed confidence. Such breadth would complement the expanding notion of the user of assurance services. The concept of a web of assurance is illustrated in Figure 2.

SysTrust and WebTrust are not static. New versions are produced as development and adaptation to new circumstances continue. We are likely to arrive at continuous assurance as these services progress further along the spectrum from periodic, after-the-fact assurance to continuous assurance. After-the-fact assurance in its most elemental form bases its reports on the results of detection and correction procedures. In a real-time reporting environment, detection and correction will be of no use to the decision maker who needs contemporaneous assurance of information quality. After-the-fact assurance by definition lags real-time reporting. Continuous assurance will have to evaluate system design and error-prevention procedures. The user of real-time information needs to know that the information is reliable because errors were prevented.

² For more on SysTrust, see <http://www.aicpa.org/assurance/systrust/index.htm>

³ For more on WebTrust, see <http://www.aicpa.org/assurance/webtrust/princip.htm>

FIGURE 2
A Web of Assurance



DECISION MAKERS AND NEW ASSURANCE SERVICES

Assurance services will be an advantage to all business reporting. That includes all information flows to parties whose decisions affect an entity—not only capital suppliers (investors and creditors), but also, for example, other suppliers, customers, governmental bodies, both employees and potential employees (“talent”), and information services such as the news media and financial information clearing houses, as illustrated in Figure 3.

All of these information relationships are opportunities for assurance services. The web of assurance for purposes of the capital markets can be extended to the information needs of other types of decisions. Modern information systems are integrated. Overlaps between needed assurance work on different information types for different sets of decision makers will create efficiencies that make a wider web of assurance more feasible.

The infrastructure is in place for new assurance services that can meet the varied and growing needs of decision makers. At the profession-wide level the AICPA’s Assurance Services Executive Committee has been developing services (SysTrust and WebTrust have already been mentioned), and individual firms have been defining services for themselves.

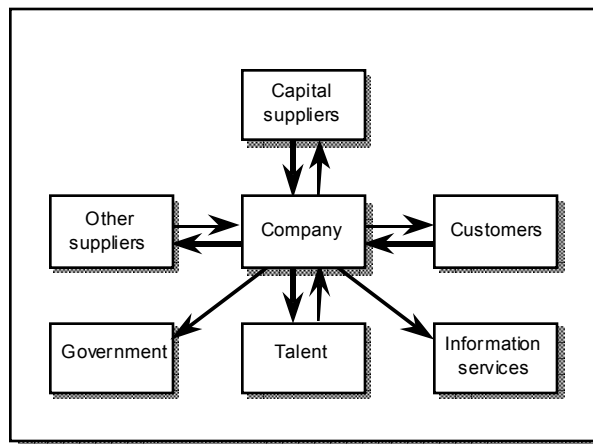
Evidence shows that CPA firms are effective service developers. They have done it before. A few years ago, the AICPA’s Special Committee on Assurance Services surveyed 21 large- and medium-sized accounting firms about the assurance services they provided. They reported over 200 nonaudit assurance services.

Recent growth in assurance services demonstrates what is possible in the future. Although the profession’s assurance revenues were flat in the eight-year period prior to 1996, thereafter they have increased at double-digit rates.

XBRL AND ASSURANCE TECHNOLOGY

Assurance is a broader concept than audit. The current and historical audit deliverable is an “opinion” on a presentation taken as a whole. This presumes that the user depends on the reliability of the presentation as a whole. However, users who apply their own analyses to data they select from web sites (e.g., finished goods inventory, measures of innovation or quality), using their own accounting assumptions to create personally tailored reports, will need assurance on the specific data they incorporate into their reports. These data will be selected from what is available, a concept different from the idea of using a complete presentation bearing an auditor’s report.

FIGURE 3
Information and Potential Assurance Flows



It is true that investment analysts disaggregate financial statements, but the concept behind what is presented to them is a complete presentation covered by an auditor's report on the presentation as a whole.⁴ It is also true that an agreed-upon-procedures engagement can provide assurance on information the user designates. However, these reports are generally available only to users with economic power and it would not be feasible to provide them on an *ad hoc* basis to a wide variety of users with diverse information needs. In the era of database access, with users selecting only the data they want to incorporate in their analyses, the notion of assurance on a presentation as a whole will not serve their needs. They will need to know the reliability of each datum they access.

All data produced by an information system could be covered by a report on that system. However, additional forms of assurance could also be available for the data selected by the user. XBRL is a system for tagging data in order to establish context and meaning. These tags can be as numerous and varied as necessary to make the data informative. An assurance tag on a datum might have a variety of values: e.g., product of an information system with SysTrust assurance, product of an information system under statistical quality control [with parameters...], unassured, not reliable, reliable [subject to...], reliable to within $\pm X$ percent at XX percent confidence, etc. With such tags, decision makers could assess the amount and type of assurance they receive and modify their decision processes accordingly. As the data change, the tags would also change, so they would always be applicable to the datum being accessed. The assurance tag approach would be a suitable counterpart to decision makers choosing the data they believe they need. It would also give another, introspective, layer of meaning to the concept of a web of assurance.

The assurer would have to have control of assurance tags sufficient to keep them up to date by changing, supplementing, or deleting outdated tags without the intervention or even consent of the client. The level of control would also have to be sufficient for the assurer to be otherwise confident in the tags' integrity. The terms of control could be contractually bargained or specified in standards or regulations, but they would have to be consistent with the interests of those who rely on the assurance.

USER PAYS

The electronic-reporting environment described above assigns the user of information a more active role than is typical of those who have traditionally relied on audits. The traditional role has been to receive the audited financial statements and analyze them at the depth desired. Users also obtain information from investor relations departments and at meetings with management. Activism of this dimension would be vastly exceeded by the initiative of information users who select the information they want in the database-access scenario described above. The population of users would also be more inclusive, as we have seen, reaching beyond financial-statement users to include all decision makers with whom the entity has significant communications.

In the traditional financial statement audit, the investor or creditor receives audited information prescribed by standard setters. Investors and creditors have taken relatively little part in FASB standard setting. The standards are formulated ostensibly to serve users' needs, but users do not unilaterally, with rare exception, define those needs. In the electronic-reporting scenario I have sketched, users would define their needs, and not only by the choices they make when visiting web sites.

Electronic reporting makes feedback possible without effort or intrusion. Information providers can learn what information was used, by whom, and when. Patterns of use will indicate the kinds of information considered helpful by those visiting corporate web sites. Users' requests for information—including unfulfilled requests—can easily be collated and analyzed. In addition, corporate queries about users' information needs can easily be distributed, collected, and analyzed.

⁴ Absent additional audit work on any particular element of the financial statements, the auditor who audited the financial statements taken as a whole would not be in a position to express a separate opinion on each element. First, the measure of materiality applying to the element would be smaller than that applying to the financial statements taken as a whole. Second, the audit procedures, being applied on a selective basis, may not adequately cover any one particular element on a stand-alone basis.

The feedback-and-supply relationship between users and corporate reporting will depend to some degree on alleviated litigation risk, perhaps including safe harbors. Although corporate managements have shown great eagerness to please capital suppliers, there will always be a “chill” on voluntary disclosures that can multiply litigation risk, which is discussed in the next section.

Nevertheless, it is impossible to underestimate the importance of institutionalized feedback to the assurance environment. Adjusting information systems in response to user feedback will enable business reporting to be tailored to users’ needs as never before. Moreover, business reporting would be tailored to users’ *changing* needs, because the continuing relevance of particular types of information will be evidenced promptly, often in near real time. Users will take on a role commensurate with their place in the ideology of financial reporting.

When users function as the central parties in business reporting, they assume the role of customers, a role long ascribed to them with less meaning than it deserved. The SEC and FASB typically play the role of customer representative, if not direct surrogate. In any case, the consumer pays the bill in most transactions, but does not in the case of assurance, as everyone knows. If we assume users take on the activist role described above, then we can conceive of user-pays systems. In fact, the electronic-reporting environment that makes the more activist role more likely also makes user-pays systems practicable. In the paper-report era, it was impossible to differentiate those investors who passively received and ignored the information that arrived in the mail from those who took more of an interest in it. In the electronic-reporting era, accessing the information is both an act of initiative indicating interest and a countable electronic event leaving a trail.

This makes possible various user-pays scenarios. In one model, the company could pay on the users’ behalf based on the number of times the assured information is accessed. Another model would have users paying directly through micro-payments based on usage (e.g., X cents per click). This runs counter to the known reluctance of web users to pay for information. It would be difficult to avoid the free-rider problem. Free riders would trust others to pay for the assurance from which they benefit. Nevertheless, user-pays approaches are technologically feasible and should get an airing. The latent tension between the mute users and their *de facto* representatives is unlikely to go unnoticed forever.

Adoption of any user-pays form would substantially change the business model of assurance firms and potentially the economic attractiveness of being an assurer.

THE INSURANCE MODEL

The potential role of the user in an electronic assurance environment could tap a different legal paradigm, itself made possible by the capabilities of electronic reporting. As already noted, electronic reporting makes it possible to identify what information was used, by whom, and when. This, together with other features of Internet reporting, makes possible an insurance transaction model. The other features are online contracting elements, such as authentication and nonrepudiation. Such online contracting elements are being developed for the sake of electronic commerce. However, electronic assurance will become a part of electronic commerce, so any borrowing of contracting features will be easy to appreciate.

Under an insurance transaction model, the insured would be paid for losses caused by faulty information. The fee could be paid by the corporation or by users, but in either case the fee—more properly termed the *premium*—and other conditions would be settled by negotiation to arrive at a contract. The contracts would typically specify the amount of assurance to be provided, the insurer’s liability limits, the procedure to resolve disputes, the premium, and the term of the insurance coverage. Negotiations need not be a time-consuming barrier to the model. The fundamental terms could be embedded in software algorithms. Standard contracts would be the buyers’ options in most cases. In those cases, the arrangement could be settled efficiently without face-to-face or protracted negotiations.

The insurer (as the assurer would be termed in this model) would decide on the procedures necessary to assess underwriting risk (the counterpart of audit risk) based on the exposure, just as

traditional insurers decide on the extent of due diligence investigation of prospective coverage depending on the exposure.

The immediate benefit of the insurance model is avoidance of the high-stakes roulette called tort law. For a number of reasons, tort law for alleged audit failure has been an ineffective approach to justice or economic sense. Juries are typically not equipped to appreciate the issues, particularly the distinction between losses from bad information and losses from combinations of marketplace and managerial misfortune. The burden of pre-trial costs has become an incentive to settle even when certain of innocence. After some experience with insurance contracts, assurers' liability exposure would become more rational and would better align incentives in the business-reporting environment.

Like the user-pays possibilities above, adoption of the insurance role would substantially change the business model of assurance firms and potentially the economic attractiveness of being an insurer/assurer.

INDEPENDENCE AND THE INSURANCE MODEL

Assurance services, by definition, call for independence on the part of the assurer. The value of the service depends largely on the assurers' avoidance of interests that could bias his or her evidence gathering, interpretation, and conclusions. An *in* insurance arrangement would, by enforceable contract, obligate the professional to indemnify the decision maker for losses caused by faulty information. The value to the decision maker lies in the reduced risk of loss from faulty information, which is also a feature of the *assurance* engagement, but comes about in this case without the need for independence requirements.

Independence requirements have not been characteristic of insurance arrangements in the past. The insured's interest is the insurer's capacity to pay when valid losses recognized by the contract are claimed. In any case, if the insured wants independence requirements to be part of the contract, they would enter the negotiations. Moreover, the insuring firm (i.e., the assurance firm) would decide on its best economic interests, which could include some restrictions on the assurance team now in independence requirements. However, there would be no demonstrable necessity for profession-wide independence requirements for insurance arrangements, even assuming the requirements were more rational than those now in place.

CONCLUSION

The possibilities before the profession divide into those that are optional and those that are necessary adaptations to the practice environment. Continuous assurance, for example, is only a matter of time, because continuous reporting is only a matter of time. A transition to an insurance transaction model, on the other hand, even if widely considered desirable, is less likely to be forced upon the profession by events. Both the inevitable necessities and the potentially desirable options should be studied by the academic community. Practitioners will adapt far better to the future with the benefit of academic research than without it. Some work is being done. One instance is the Third Continuous Reporting and Auditing Conference held at Rutgers University, in June 2001. But more could be done. In the end, it would benefit the academic as well as the practitioner branches of the profession. Adaptation to the future has enriched the profession's body of knowledge and attractiveness to students in the past. It will do so in the future.

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