

Continuous Auditing and IT Developments

By Miklos A. Vasarhelyi and Alexander Kogan¹

The world of auditing is changing. Annual reports are now of limited value to investors who trade on a daily basis directly through online brokerages. Organizations can fail due to the actions a rogue trader 3,000 miles away from corporate headquarters. In response, the AICPA² is proposing a series of new assurance services and has asked ISACA, a global leader in information technology governance and control, to support this effort.

The majority of audit services are now computer-based. Internal and external audit organizations face a rapid pace of change and the strong need for improved assurance/audit services. This is the process of electronization of business, where distance is not a major issue and organizations have virtual structures that span the globe.

Electronization of Business

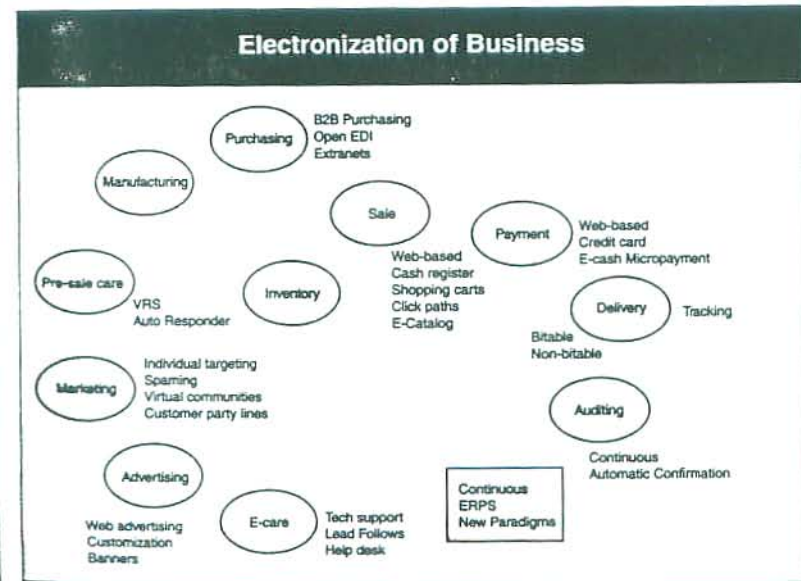
Ubiquitous networking, nearly free computer cycles, cheap storage and the distribution of processing and communication capabilities across various devices are fundamentally changing business processes. More than at any time in recent history, business will become substantially different in the next 10 years. Figure 1 describes key business processes and key electronization tools and processes that are dramatically changing the business scenario.

Two business processes of particular interest to information systems auditors are the measurement process and the assurance process. Both are undergoing dramatic change, moving towards online process monitoring, online reporting of key flows and balances and online auditing of all company processes.

Several information technology developments color this evolution. The emergence of enterprise resource planning systems such as SAP, BAAN and PeopleSoft created new opportunities. Standardization of enterprise information systems makes it possible to allocate the cost of developing continuous auditing software across many enterprises of the same industry. For example, KPMG has developed a "Funds Radar" which applies to the mutual funds industry, since one software package has a substantial share of that industry's market.

Another important factor is the proliferation of intelligent microsensors. A variety of sensors can be incorporated into business processes to automatically measure the level of activity of a particular process. For example, smart chips embedded in inventory items allow for continuous measurement of inventory levels and smart chips embedded into large pieces of inventory allow for automatic tracking of items while identification chips embedded into production batch processes allow for batch accounting across job shops.

The advent of continuous accounting processes also will have secondary effects. An infrastructure of data collection, analysis and contingent action will develop, allowing for secondary processes to be performed at very small cost. For example, if certain repeated events are identified as patterns of fraud, then the existing infrastructure will allow for online real-time detection of fraud and the interruption of transaction processing prior to the completion of the fraud. Integration of processes across traditional systems facilitated by a common transaction monitoring infrastructure will allow for improved understanding of relationships between successive processes in the value chain. These processes may be integrated in an extranet without increased economic or fraud risk.



Articles in This Section

This issue of the *IS Audit & Control Journal* focuses on some of the most important continuous audit developments such as the utilization of semantic structures to provide additional analytical review information to management and auditors, and some industrial experiences in the practice of continuous auditing.

Agrawal in "Automating Reviews in a Distributed Computing Environment" discusses the Citibank experiences in continuously assuring its online environment. Voarino and Vasarhelyi in "Continuous Auditing and Control Scripting at BIPOP: An Evolving Case Study of Bank Continuous Auditing in a SAP Environment" discuss the design and progressive implementation of a continuous audit module under the SAP methodology in an Italian bank.

Finally, Vasarhelyi and Peng in "Qualitative Corporate Dashboard for Continuous Monitoring" propose the usage of semantic analysis techniques for monitoring media reports on related corporate events.

Conclusions

The articles in this section provide a timely consideration of rapid changes in corporate measurement processes, which are prompted by the need to cope with changes in the business environment. Information systems auditing has come of age. Its methodology and processes are now mainstream and often lead business in change. Accounting research has been noteworthy for its conservatism and resistance to change. The technological auditor, who is involved in every process of the changing environment, has the opportunity to lead the change, and guide business towards rapid advancement and progress.

Footnotes

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² AICPA, Systems Reliability Committee, 1999.

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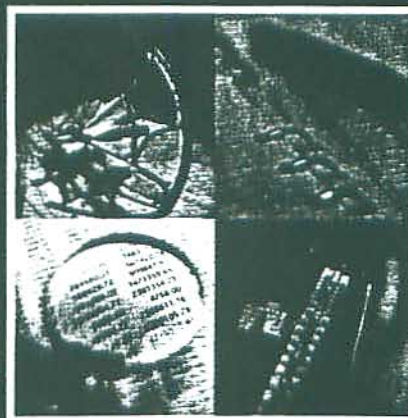
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