

Information Systems Auditors: Friend or Foe?

by Charles K. Davis & Charlene A. Dykman

Information Systems management finds itself in a dilemma. Maintaining competitiveness in the marketplace increasingly means that organizations must rely on computing and networking technologies that are new and essentially unfamiliar, that are unstable in the sense that any given application of the technology tends to become obsolete quickly, and that fundamentally change how organizations do their work. This reality cannot be avoided. This article identifies a valuable resource that can help managers effectively control these technologies.

Ingrid Jones stared out the window at the flurry of activity in the parking lot of AIRKAT, Inc. She had recently been selected as Chief Information Officer of the medium-size company and was primarily responsible for all of this activity. There were several large trucks of computing equipment and software being delivered. She could see the delivery people checking their orders, comparing them to the labels on the boxes, loading them on the dollies, and proceeding to designated offices. She knew that various managers and other "knowledge-workers" at AIRKAT were, in some cases excited, and in others apprehensive, about these impending deliveries. She harbored both of these emotions at the same time, herself.

Ingrid was formally educated, having recently earned an MBA at a prestigious university. She had spent many years in the "IS trenches" on both the operations and the systems development sides. She was well

aware of the importance of remaining competitive through the deployment of technology. The latest computer-based information systems, such as Electronic Data Interchange, Group Decision Support Systems, Multi-Media Systems, Point of Sale Systems and the like, presented opportunities to improve productivity internally and to improve the external business relationships that were so critical to AIRKAT's prominence in the industry.

It all sounded so clear when she was taking courses about these systems, reading business publications, or dealing with various vendors. She knew that the impact of computer systems on business organizations has been wide-ranging and profound during the last half of the twentieth century. New computing and communications networking technologies have proliferated across corporations and revolutionized how they operate at every level. As these changes have occurred, executives and managers

have attempted to use new technologies as agents of change to continuously reshape their organizations into stronger and more competitive forces in their respective markets.

Ingrid knew all of these things, but there was a certain anxiety and trepidation that accompanied AIRKAT's move into the world of high technology. In using computing and networking technologies to help restructure organizations and to re-engineer organizational work processes, Ingrid is faced with a complicated problem. First, these technologies generally involve new systems that are technically sophisticated and complex in operation; and they tend to be "moving targets," evolving rapidly in scope and capability, and in their influence on the firm. If the truth were known, Ingrid Jones is not certain what collection of technological alternatives is best for AIRKAT.

In fact, because of the ongoing technological changes that underlie

these kinds of systems, even the timing of installation becomes an issue that can be problematic. There was plenty of room for anxiety as she watched the delivery workers proceed. She had recommended and obtained approval of large financial investments. AIRKAT's multi-building facility would be networked. A database management system would be installed. A CASE system was next in line for implementation. Have the best choices been made? Is AIRKAT ready for this? Will something better be available next year? Should we have waited? It is too late to harbor these doubts. What's done is done; the systems are arriving; and there is no turning back for Ingrid or for AIRKAT, Inc. There are new crises to be faced. How can Ingrid be sure that systems are properly implemented or even if they are being used correctly after implementation? These problems are magnified by the seemingly endless inability of the technical staff involved in computing and networking to communicate effectively with higher level management personnel. Sometimes it seemed that Ingrid and corporate level management at AIRKAT were just talking in different languages.

Ingrid Jones does not have the time (nor the inclination) to learn about such systems in much detail. As the top systems manager, she simply cannot spend too much time focused on one type of technology. That is the job of her managers and staff. However, she has the responsibility to ensure that such systems contribute to the overall success of the enterprise. Even if corporate management takes the time to become familiar with a few of these technologies, the incessant progression of change in these systems dictates that the useful life of the associated knowledge will be short. In spite of this, Ingrid could see that success in her marketplace is increasingly being defined in terms of how well organizations assimilate information technologies. Using information technology effectively has become a strategic issue of

the first order. Ingrid's dilemma is simply this:

"How do I plan and control the activities of the MIS organization, and minimize the risks to the business? AIRKAT is being forced by its competition to become increasingly dependent on exotic new ways of doing business. I'm not sure that I'm prepared for the risks I'm about to take. How do I protect my company, my stockholders, and myself?"

It is the "coming to grips" with this modern dilemma in a myriad of firms like AIRKAT that has catapulted the old profession of EDP AUDITING into new prominence.

So What is an "EDP Auditor"?

The function performed by the EDP auditor has been "carved out of" the general management role within the typical organization. It is an area of intense specialization, such as the Personnel Department or the MIS Department. The EDP audit function grew out of the need to provide general management with independent, unbiased reviews and assessments of information technology applications throughout the firm.

In the beginning, the EDP auditing function was an extension of financial auditing. As accounting systems became increasingly automated, a corresponding need evolved to examine the computer systems that processed accounting data. Errors or fraud in these computer systems could potentially mask serious problems in the accounting statements generated. It became necessary to examine such computer systems as part of the financial auditing process. Thus, a specialization in the assessment of financial computer applications evolved naturally in two major areas of auditing, internal and external.

Internal auditors are regular employees within the company that they review. They examine financial records, procedures, software, computer systems, and systems of controls to

verify that internally generated financial information is accurate. Internal audit personnel are organizationally independent from the departments that they audit and one area of internal audit specialization is the EDP audit group.

External auditors are employed by CPA firms and move from company to company examining the same kinds of financial records, procedures, software, computer systems, and systems of controls that are reviewed by the internal audit staff. External auditors need to be able to generate financial statements that attest to the financial well-being, or lack thereof, for the corporation being audited. External auditors too utilize EDP audit specialists to supplement the financial auditing process.

Because of the ongoing involvement in the financial audit process and because of the required technical expertise of the EDP auditor, it is only logical for executive management to begin to view the EDP audit specialist as someone who could help to control the information technology behemoth. These "control" experts are rapidly becoming "Information Systems Auditors" and are a critical element in managing the risks of information technology in order to reap the benefits of these developments in information technology.

So What is an Information Systems Auditor?

The information technology infrastructure in business organizations is proliferating into every conceivable corner of corporate life. Corporate dependence on information technology for competitive advantage is continually expanding. The rate of change in the scope and capabilities of information technologies is accelerating. All of these factors imply a growing need for a sophisticated staff function to review and assess the use of information technology in organizations. The EDP auditor, whose archaic "nom de plume" still rings of its modest beginnings as an adjunct to the traditional financial audit process, suddenly finds himself (herself) thrust

into the forefront, reborn as the "information systems auditor." These specialists purport to have both the financial auditor's professional polish, business savvy, and credibility and the systems technician's detailed understanding of the information systems infrastructure, its underlying technologies, methodologies, and controls.

Ingrid Jones as the Manager of Information Systems at AIRKAT will find that an information systems auditor is essentially in a position to be a consultant to management, a hybrid "technocrat" upon whose judgement she can rely in coping with the myriad complexities that derive from modern information technology applications. IS Auditors may represent the best ally an MIS manager has because they are able to bring an independent perspective, steeped in a tradition of "sniffing" out the weaknesses, to their review of the deployment of technology in an organization. On the other hand, because these auditors conduct reviews (often spontaneous) of adherence to both professional and departmental MIS policies and procedures, they can be seen as interfering and threatening by MIS management. Ingrid Jones must manage this relationship very carefully. True working partnerships are essential between the IS staff and the IS Auditors who will be independently assessing much of the work of the IS department.

Effective IS Auditors have a thorough understanding of the principles of information resource management (IRM). It is as if IRM and information systems auditing are "two sides of the same coin." Managing information resources is a process that involves the application of a related body of knowledge that has accumulated over the past thirty years. It involves well-established, even "generally accepted," procedures and techniques for managing, developing, and operating information systems resources efficiently and effectively. Auditing information systems, on the other hand, involves verifying that these

generally accepted procedures are required by management and followed by lower level employees in a given organization. Of course, every organization tends to have its own way of doing things, so the real issue in auditing boils down to one of judgement. How closely does a set of procedures follow the accepted approach and how closely should it in a given situation? For instance, did decisions to acquire AIRKAT's new systems follow normal AIRKAT requirements for capital investments, including return on investment projections, comparative evaluations between vendors, etc.? Will realized benefits be evaluated as projected?

Such procedures may relate to a host of managerial and technical paradigms. For example, a typical information systems audit includes reviews of controls within the MIS environment. These controls are generally organized into two classes: Administrative Controls and Applications Controls. The first class deals with overall managerial control of the MIS function and includes such areas as long range systems planning, performance evaluation and salary administration for MIS employees, budgeting and financial policy, managing computer and network vendor relationships, disaster-recovery planning, database administration, overall security administration, computer and network operating procedures, etc. Administrative controls are generally reviewed every year as part of the annual auditing processes.

The second class deals with the controls associated with a specific application system and includes systems development and maintenance procedures, change control procedures, user support activities associated with an application system, documentation levels, application operating and security procedures, etc. Applications systems are reviewed on a cyclic basis, with a particular area of applications reviewed during a given year. Others are reviewed in subsequent years eventually coming back

to the first area several years later. Of course, the order of review is subject to revision if problems are detected (or suspected) in a particular application, or if management is otherwise concerned about a given system.

Systems of controls such as these, taken collectively, provide assurances that reasonable and appropriate procedures are being followed across the MIS organization. Given these assurances, the information systems auditor can infer that the risks associated with the information systems environment are minimal. Conversely, the information systems auditor can identify areas of weakness in the MIS organization and investigate these areas in detail (a process called substantive testing). Recommendations that management can use to address problem areas are then provided. Ingrid Jones can look to AIRKAT's IS Auditors to address her fears and assess the quality of the decisions she has made. With such an approach, she can view future deliveries with assurance that AIRKAT will be in a position to be one of the "success" stories of effective use of information technology.

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