

RESEARCH OPPORTUNITIES IN INTERNAL AUDITING

**Edited by Andrew D. Bailey, Jr., Ph.D., CIA, CPA, CMA, CFE,
Audrey A. Gramling, Ph.D., CIA, CPA,
and
Sridhar Ramamoorti, Ph.D., CIA, ACA, CPA, CFE, CFSA, CRP**



The Institute of Internal Auditors Research Foundation

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The Professional Practices Framework for Internal Auditing (PPF) was designed by The IIA Board of Directors' Guidance Task Force to appropriately organize the full range of existing and developing practice guidance for the profession. Based on the definition of internal auditing, the PPF comprises *Ethics* and *Standards*, *Practice Advisories*, and *Development and Practice Aids*, and paves the way to world-class internal auditing.

This guidance fits into the Framework under the heading *Development and Practice Aids*.

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EDITORIAL PREFACE

Andrew D. Bailey, Jr.
Audrey A. Gramling
Sridhar Ramamoorti

“The task of the university is the creation of the future, so far as rational thought, and civilized modes of appreciation, can affect the issue.”

*— Alfred North Whitehead (1861-1947)
British Philosopher and Mathematician*

Background

Recent scandals in corporate America beginning in late 2001 and the precipitously dropping stock markets of 2002 prompted Congress to unleash the most sweeping regulatory and corporate reform legislation in the United States since the Securities Acts of 1933 and 1934. During this time of a severe crisis of confidence in America’s corporate management, organizational governance structures and related processes have come under scrutiny. Financial reporting and corporate governance, usually considered arcane and esoteric issues, have captured the attention of the press, the public at large, and Congress.

In the past, crises of this nature did not focus on the role of internal auditing. Today, many are looking to the internal audit function and the chief audit executive as part of the solution to a perceived breakdown in the systems of business reporting, internal control, and ethical behavior. The problem has become so severe that even the general public is beginning to understand the critical role that the internal auditing profession can play. Corporate management needs to change, but it also needs to be able to demonstrate the credibility of its leadership. Specifically, within organizations, those charged with governance need to provide assurances that they have implemented effective governance processes and that all information reported to the public is itself credible. The internal auditing profession’s role in this process can be a significant one.

The New York Stock Exchange recently announced that all NYSE-listed companies must establish an internal audit function — a powerful endorsement and recognition of the critical significance of internal audit activities. The Institute of Internal Auditors welcomes this important acknowledgment of the internal auditor’s role in promoting and supporting effective organizational governance and credible business reporting.

The Board of Trustees of The Institute of Internal Auditors Research Foundation firmly believes that the academic community has made and can make further significant contributions to the advancement of the internal audit profession globally.¹ This monograph, “Research Opportunities in Internal Auditing” (ROIA), represents the first step in the Board of Trustees’ commitment to thought leaders in the academic community. The Board of Trustees hopes that this monograph will foster research on important issues of interest to the public and the internal auditing community and intends to fund future research based on projects inspired by this monograph. As ROIA coeditors, we believe that both basic and applied academic research can provide insight and useful tools that will influence the thinking of other academics, practitioners, including business leaders, standard-setters and policy makers, regulators, students, and the general public. Indeed, effective communication of research findings based on sound academic research can fundamentally shape the future of internal auditing. We are gratified to note The IIA Research Foundation Board of Trustees’ sincere interest and commitment to this strategic, long-term endeavor.

We have sought out well-known and respected academics as contributors to this research monograph. We did not provide these authors with an agenda other than that they reflect on the potential research contributions that might be made toward a deeper understanding of the internal auditor’s function. We believe that advances in knowledge, and whatever the specific outcomes of the ROIA monograph-inspired research programs, will prepare future generations of internal auditing professionals to better deal with the challenges of a dynamic and complex global business landscape. Addressing these significant and timely questions scientifically calls upon the university to serve in its traditional role of promoting socially productive research and is the first step toward incorporating new ideas in the curriculum. It is in this sense that we understand philosopher Alfred North Whitehead’s remarks to ring true — for research insights and teaching innovations at universities carry the potential to “create the future” or define/change the trajectory of entire professions, including the profession of internal auditing.

Genesis of ROIA Research Monograph

Over two years ago, members of The IIA’s international Academic Relations Committee put together a proposal to actively engage U.S. accounting academics in carrying out basic research on internal auditing. This proposal was endorsed by then Academic Relations Chair Mary Blake and strongly supported by Larry Rittenberg, then Vice-Chairman of Professional

¹Co-editors Andrew Bailey and Sridhar Ramamoorti are members of The IIA Research Foundation Board of Trustees, and chapter author, Larry Rittenberg, is President of The IIA Research Foundation Board of Trustees.

Practices of The IIA, and by Basil Pflumm, Executive Director of The IIA Research Foundation. Soon thereafter, a revised proposal was approved by The IIA Research Foundation Board of Trustees then headed by LeRoy Bookal (now IIA Chairman of the Board). Following the Board of Trustees' approval, and a summer 2001 planning session in Chicago, this research monograph became the initial focus of the project. Shortly after this meeting, contacts were initiated with a select group of auditing academics, based on their prominence as respected academic researchers, their various areas of specialization, and existing or potential interest in internal auditing. Each of these individuals was asked to participate as an ROIA author and we were overwhelmed by their enthusiastic response.

The coeditors and chapter authors met during the August 2001 annual meeting of the American Accounting Association (AAA) in Atlanta, Georgia. During this session, and in the following months, the ROIA monograph began to take shape. Preliminary drafts of ROIA chapters were discussed at a May 22-23, 2002, conference in Chicago, featuring both academic and practitioner participants (see list of attendees immediately following this preface). The conference proved most helpful in crystallizing the ROIA monograph structure, topical content, in coordinating author efforts, and in surfacing academic and practitioner perspectives. Much progress had been made in securing finalized draft chapters from all the ROIA authors by August 2002. By early October 2002, we were ready to submit the final drafts to The IIA's publishing and editorial staff.

Purpose, Scope, and Organization of ROIA Research Monograph

The ROIA monograph is first and foremost intended to serve as an inspiration for sound academic research on topics of interest and importance to internal auditing. Second, it has been written to act as a "communication bridge" between academics and practitioners. The already mentioned Chicago ROIA conference was of particular value in assuring that this communication bridge goal would be successful by initiating a fruitful dialogue between academics and practitioners. The coeditors of the ROIA monograph, the chapter authors, as well as the academic and practitioner participants of the Chicago ROIA conference in May 2002 are all committed to sharing their respective perspectives in the true spirit of The IIA's motto, "Progress through Sharing." However, in blending theory and practice, we are doing more than combining perspectives, methodologies, or techniques. We are bringing together two different communities — two distinct cultures. We are fully cognizant of the challenges in blending theory and practice; however, we remain convinced that it is only through such a merging of perspectives, sometimes called "creative abrasion," that the most conceptually sound and robust practical solutions can be developed.

We also believe that the key to continued development of basic, applied, and pedagogical research in internal auditing is to take advantage of our knowledge of accounting institutions and decision settings to provide a basis for the selection of important research topics. The ROIA monograph is designed to make academic researchers more familiar with the rich context of internal audit practice while presenting conceptual frameworks that will promote better understanding of related concepts and theories. In this respect, the research questions appended to each chapter can be extremely helpful in choosing one or more lines of research worthy of exploration and investigation. Clearly, readers may develop additional questions based on the substance of the ROIA monograph and we do hope this will be the case. Also, the reader will note that the ROIA chapter authors do not suggest how specific issues might be addressed. We concluded that research method selection is a judgment best left to the academic researchers themselves as this aspect plays to their comparative advantage and strength.

Although the academic community is the primary audience for the ROIA monograph, we believe that others too would benefit by reading its contents. For instance, practicing internal auditors reading the monograph will gain a better understanding of the role of research in helping to shape theory. Perhaps more importantly, practitioners will gain an insight into how theory influences The IIA's *Professional Practices Framework*, the role of professional judgment in internal auditing, the development and feasible uses of new tools and techniques, and the education of future internal auditors. They will come away with a better grasp of how all of these influences collectively drive state-of-the-art and contemporary internal auditing practice. In addition, as has been emphasized before, the ROIA research monograph highlights the value of academic-practitioner collaborative efforts in pursuing solutions to challenging practical problems. Finally, we believe that the monograph will provide both undergraduate and graduate auditing students, as well as interested, non-auditor practitioners, with a fuller understanding of the interplay between research and practice that is necessary to keep the internal auditing profession intellectually vibrant, relevant, and visionary.

The chapters are organized in what the coeditors felt was a logical sequence. The reader may have chosen a different order. We do not consider this an important issue. The Table of Contents reflects our thinking and provides a reasonably extensive listing of each chapter's contents as an aid to readers in locating topics of particular interest to them. The Tables of Research Questions at the end of each chapter may also be of substantial help in both identifying issues and locating the chapter content of particular interest to the reader.

Concluding Remarks

The coeditors of this monograph believe that academics, practitioners, and students can benefit by reading the monograph. Our preface tries to communicate the potential benefits for both academics and practitioners. We now place this effort before the academic community in the hope that they will gain from the insights of the chapter authors, but even more important, that they will bring new and previously unconsidered insights of their own to the process. We leave it to these researchers to develop projects that are integrative not only of issues, but also of disciplinary approaches to the complex problems of internal auditing. We have considerable faith in and rely on the research efforts of our colleagues to make this monograph a success.

In closing, we wish to express our indebtedness to Larry Rittenberg, President of The IIA Research Foundation, for his leadership and significant contributions to the ROIA effort (including as a chapter author). We would also like to thank all the chapter authors and discussants for their many hours of quality work and their unswerving commitment to tight deadlines that has made this monograph possible within a reasonable time frame. Finally, we must mention IIA staff members, Basil Pflumm, Susan Lione, Senior Manager of Research, and Nicki Creatore, Research Administrator, for their valuable advice and assistance on behalf of The IIA, as well as IIA Publications Editor Lee Ann Campbell for her help with the publication content and logistics.

Andrew D. Bailey, Jr., Champaign, Illinois
Audrey A. Gramling, Atlanta, Georgia
Sridhar Ramamoorti, Chicago, Illinois
October 2002

LIST OF PARTICIPANTS
CHICAGO ROIA CONFERENCE
MAY 22-23, 2002

- Professor A. Rashad Abdel-khalik, *University of Illinois at Urbana-Champaign*
Mr. Bruce Adamec, President, *Creative Assurance*
Professor Urton L. Anderson, *University of Texas-Austin*
Professor Andrew D. Bailey, Jr., *University of Illinois at Urbana-Champaign*
Mr. Larry Brown, *Options Clearing Corporation*
Mr. Andy Dahle, *PricewaterhouseCoopers LLP*
Professor Audrey A. Gramling, *Georgia State University*
Mr. Eric Hespenheide, *Deloitte & Touche LLP*
Ms. Evelyn Howell, *Sara Lee Corporation*
Professor William R. Kinney, *University of Texas-Austin*
Mr. Michael P. Krzus, *Grant Thornton LLP*
Professor Morley Lemon, *University of Waterloo*
Ms. Betty McPhilimy, *Northwestern University*
Professor Jane F. Mutchler, *Georgia State University*
Professor Douglas F. Prawitt, *Brigham Young University*
Dr. Sridhar Ramamoorti, *Ernst & Young LLP*
Professor Larry E. Rittenberg, *University of Wisconsin-Madison*
Emeritus Professor Curtis C. Verschoor, *DePaul University*
Professor O. Ray Whittington, *DePaul University*

BIOGRAPHIES OF EDITORS AND CHAPTER AUTHORS

Urton Anderson, CIA, CCSA, CGAP, is Clark W. Thompson, Jr., Professor in Accounting at The University of Texas at Austin and the Associate Dean for Undergraduate Programs. He joined the Department of Accounting at the University of Texas at Austin in 1984, teaching auditing and managerial accounting. Urton received his Ph.D. from The University of Minnesota in 1985. Urton's research has addressed various issues in internal and external auditing. He has written two books, *Quality Assurance for Internal Auditing* and *Implementing the Professional Practices Framework* (with Christy Chapman), as well as papers published in a variety of scholarly and professional journals. He is a Certified Internal Auditor and from 1994 to 1999 served on the Board of Regents for The Institute of Internal Auditors. In 1999 he was appointed a member of the Internal Auditing Standards Board and is currently its chair. He served on the CCSA Steering Committee, which developed the professional examination for Control Self-Assessment and the CGAP Steering Committee for the new professional examination in governmental auditing. In 1997 he was awarded the Leon R. Radde Educator of the Year Award by The Institute of Internal Auditors.

Andrew D. Bailey, Jr., Ph.D., CIA, CPA, CMA, CFE, Professor Emeritus, Accounting, University of Illinois, August 2002. Prior to retirement, Professor Bailey was the Ernst & Young Distinguished Professor of Accounting. He was previously Director of the Center for International Education and Research in Accounting (CIERA) and Editor of *The International Journal of Accounting* (TIJA). He was head of the Department of Accountancy, University of Illinois, from autumn 1994 to summer 1997. He earned two degrees at the University of Minnesota, B.S.B. and M.S. in accounting, before earning his Ph.D. in accounting at The Ohio State University in 1971.

Earlier, he was the Deloitte & Touche Professor of Accounting and Head of the Department of Accounting at The University of Arizona. He has also been a faculty member at the Universities of Maine, Minnesota (Department Chair), Iowa, Purdue, and The Ohio State University (Arthur Young Professor of Accounting). He has been a Visiting Professor at the University of Queensland in Australia, The Otago University in New Zealand, The Norwegian Graduate School of Management in Oslo, Norway, and Groupe École Supérieure de Commerce de Paris (ESCP) in Paris, France. Formerly with Touche Ross & Co., he is a past President of the American Accounting Association and past chairman of the auditing section of the AAA. He has served as coeditor of *Auditing: A Journal of Practice & Theory*, Associate Editor of *The Accounting Review* and has served on numerous academic journal review

boards. He was the national Beta Alpha Psi Accountant of the Year (Educator), 1996. His research interests include a range of auditing and professional issues, including auditing in a computerized environment. He currently serves on the Board of Trustees for The Institute of Internal Auditors Research Foundation, the AICPA CPA Examination Content Committee, and several committees of the American Accounting Association. A full vita can be found at www.cba.uiuc.edu/accountancy/faculty/vitaes/bailey1.pdf

Audrey A. Gramling, Ph.D., CIA, CPA, is an assistant professor in the School of Accountancy in the Robinson College of Business at Georgia State University. Prior to joining the faculty at Georgia State University, she was an assistant professor and PricewaterhouseCoopers Faculty Fellow in the Calloway School of Business and Accountancy at Wake Forest University (1998 – 2000) and a faculty member in the Department of Accountancy at the University of Illinois in Urbana-Champaign (1995 – 1998). She received her Ph.D. from the University of Arizona in 1995 and also holds degrees from the University of Toledo and Georgia State University. Before obtaining her Ph.D., Audrey worked as an auditor at Deloitte & Touche (then Deloitte, Haskins & Sells) in Atlanta, Georgia, and as an internal auditor at Georgia Institute of Technology.

Audrey teaches courses in auditing and assurance services and financial accounting. Her research investigates both internal and external auditing issues, with a focus on decision behavior of auditors, audit firm industry specialization, and other factors affecting the market for audit and assurance services. Her research results have been published in several academic and professional journals, including *Journal of Accounting Research*; *Auditing: A Journal of Practice and Theory*; *Accounting Horizons*; *Journal of Accounting, Auditing & Finance*; *Journal of Accounting Literature*; *Internal Auditing*; and *Issues in Accounting Education*. She has received research grants from The Institute of Internal Auditors and KPMG.

Dana R. Hermanson is Cofounder and Director of Research of the Corporate Governance Center at Kennesaw State University, where he is a Professor of Accounting. He has authored or coauthored over 100 publications, including articles in such journals as *Contemporary Accounting Research*; *Auditing: A Journal of Practice & Theory*; *Journal of Accounting and Public Policy*; *Accounting Horizons*; and *Behavioral Research in Accounting*.

Dana is coauthor of a study performed for the Committee of Sponsoring Organizations of the Treadway Commission (COSO), *Fraudulent Financial Reporting: 1987-1997, An Analysis of U.S. Public Companies*. The results of the study have influenced NYSE and NASDAQ listing requirements, as well as SEC disclosure rules, for smaller public companies. His research, letters, or quotes have appeared in such outlets as *Newsweek*; *The Wall Street Journal*; *Business Week*; *USA Today*; *Investor's Business Daily*; *The Washington Post*; *Dow*

Jones Newswire; Barron's; Bloomberg; Fortune; Associated Press; and Reuters. Dana was a member of the National Association of Corporate Directors' Blue Ribbon Commission on Audit Committees. He has received several awards for his contributions in research, teaching, and professional service, including the 1999 Kennesaw State University Distinguished Scholar Award and the 2000 Kennesaw State University Distinguished Service Award.

William R. Kinney, Jr., Ph.D., (BS/MS Oklahoma State, 1963/1966; Ph.D. Michigan State, 1968) has taught accounting and auditing at Oklahoma State, Iowa, Michigan, INSEAD, and Texas. Presently the Charles and Elizabeth Prothro Regents Chair in Business and PricewaterhouseCoopers Auditing Fellow at the University of Texas at Austin, he is author of more than 80 scholarly articles. He has received the AAA's Wildman Award (twice), Notable Contribution to the Accounting Literature Award, and Outstanding Educator Award, as well as the AICPA's Distinguished Contribution to Accounting Education Award. Kinney served as Editor of *The Accounting Review*, and has been a member of the AICPA's Auditing Standards Board and the FASB's Financial Accounting Standards Advisory Council.

W. Morley Lemon, Ph.D., FCA, CPA, obtained his BA from the University of Western Ontario (1961), his MBA from the University of Toronto (1972), and his Ph.D. from the University of Texas at Austin (1975). He obtained his CA in 1965 and was elected a Fellow of the Institute of Chartered Accountants of Ontario in 1985. He received his CPA in Texas in 1974.

Professor Lemon is the PricewaterhouseCoopers Professor of Auditing. In 1998 he was awarded a University of Waterloo Distinguished Teacher Award. Professor Lemon has been active in professional activities, including four years as a member of the CICA's Assurance Standards Board. His publications include a coauthored monograph on the audit risk model, a coauthored monograph on accounting methodologies of large firms, and articles in academic and professional journals. He has presented papers at academic and professional meetings and universities in Canada and the United States. He has served on the editorial boards of several academic journals.

Professor Lemon is coauthor, with Arens, Loebbecke, and Spletstoesser, of *Auditing and Other Assurance Services*, Canadian Ninth Edition published by Prentice-Hall Canada in 2000, and coauthored five previous editions. He is coauthor with Harrison Horngren, Bamber, and Norwood of *Accounting*, Canadian Fifth Edition (2002), and coauthored four previous editions.

Jane Mutchler, Ph.D., is Associate Dean for Masters Programs and the Ernst & Young - J. W. Holloway Memorial Alumni Professor in the Robinson College of Business at Georgia State University. Prior to her appointment as associate dean she was Director of the School of Accountancy in the Robinson College. She received her bachelor's and master's degrees in Accounting at the University of South Florida and her Ph.D. in Accounting and Economics at the University of Illinois. Her research focuses on failed companies and auditors' going concern opinion decisions related to such companies and has been published in *Auditing: A Journal of Practice and Theory*; *Journal of Accounting Research*; *The Accounting Review*; and *Contemporary Accounting Research*. She previously held positions at Ohio State University, where she was named KPMG, Peat Marwick Faculty Fellow, the University of Arizona and Penn State University where she was named Coopers & Lybrand Faculty Fellow and Arthur Andersen Professor of Accounting. She has also held faculty internships at the World Bank and at the Philadelphia office of Andersen LLP. She has served as President of the Auditing Section and VP-Education for the American Accounting Association. She is a member of the Accounting Accreditation Committee of the AACSB and a member of the Board of Research Advisors for The Institute of Internal Auditors.

Douglas F. Prawitt, Ph.D., CPA, is an associate professor at Brigham Young University. He received his B.S. and MAcc degrees at BYU and his Ph.D. at the University of Arizona, prior to which he worked in private industry as an internal auditor. Doug teaches financial statement auditing and assurance services courses in BYU's graduate accounting program, and accounting and effective managerial decision-making courses in BYU's Executive MBA program. Doug's research, which focuses on the judgment and decision-making of accounting professionals, has been published in *The Accounting Review*; *Organizational Behavior and Human Decision Processes*; *Pacific Accounting Review*; *Journal of the American Taxation Association*; and *Behavioral Research in Accounting*.

Doug currently serves on the editorial board of *Auditing: A Journal of Practice & Theory*. In addition to his academic research, he has written several award-winning articles for professional journals, including *Internal Auditor*; *Journal of Accountancy*; and *CPA Journal*. He has also coauthored several books and monographs, including the recently published *Independence & Objectivity: A Framework for Internal Auditors*, and *eBusiness: Principles and Strategies for Accountants*. Doug was awarded the BYU Marriott School's "Outstanding Research" award in 1998, the Marriott School's "Teaching Excellence" award in 2000, and the BYU Management Society's Merrill J. Bateman Student Choice Teaching Award in 2002. He is currently the Warnick/Deloitte & Touche Research Fellow at BYU. Finally, Doug has served on several professional committees and task forces, including The IIA's Independence & Objectivity and Advanced Technology Committees and was recently a member of a research team selected and funded by

the American Institute of CPAs to study the effectiveness of SAS No. 82, *Consideration of Fraud in a Financial Statement Audit*. He currently represents the American Accounting Association on COSO's Enterprise Risk Management Advisory Council.

Sridhar Ramamoorti, Ph.D., CIA, ACA, CPA, CFE, CFSA, CRP, is the *Assistant Director of Thought Leadership* in the Global Investigations & Dispute Advisory (GIDA) practice of Ernst & Young LLP. His thought leadership responsibilities encompass GIDA practice development, academic partnering, including professional research and publications, and technical practice support roles. Prior to joining Ernst & Young, Sri was a Principal with Arthur Andersen's firmwide Professional Standards Group. His blended academic-professional work experience also includes teaching and research, first as a graduate student at The Ohio State University, and subsequently, as a member of the University of Illinois' Accountancy faculty.

Earlier in his career, Sri worked as an auditor in the Middle East offices of Ernst & Whinney (a predecessor firm of Ernst & Young). Sri earned a Bachelor of Commerce (BCom.) degree from Bombay University, India, and the Master's in Accounting (MAcc.) and Ph.D. (Quantitative Psychology) degrees from The Ohio State University, Columbus, Ohio. He also holds numerous professional certifications. He has published extensively, and serves on the editorial review boards of several academic and professional journals.

An active volunteer in professional associations, Sri is presently the Chairman of The IIA's international Academic Relations Committee, a member of The IIA Research Foundation's Board of Trustees, and recently joined the Board of Governors of the Chicago IIA Chapter. He also serves as the India-Liaison Officer on behalf of the Association of Certified Fraud Examiners, Austin, Texas. He is the recipient of the 2004 Association of Government Accountants' (AGA) National President's Award for his editorial services as Vice-Chairman of the editorial board of the *Journal of Government Financial Management*.

Larry E. Rittenberg, Ph.D., CPA, CIA, is Ernst & Young Professor of Accounting & Information Systems at the University of Wisconsin. He is currently the Vice President of Research and President of The Institute of Internal Auditors Research Foundation. His responsibilities include coordinating and funding research on the practice of internal auditing on a global basis.

Professor Rittenberg teaches and researches mainly in the areas of auditing and corporate governance. He is the coauthor (along with Brad Schwieger) of *Auditing: Concepts for a Changing Environment* (2001) and the coauthor of *The Outsourcing Dilemma: What Works*

Best for Internal Auditing, recently published by The Institute of Internal Auditors Research Foundation. He was a member of the Drafting Subcommittee and a committee member of the *Report of the NACD Blue Ribbon Commission on Audit Committees*. Professor Rittenberg is one of the five board members of COSO, the Committee of Sponsoring Organizations of the Treadway Commission. He is the 1998 recipient of the Leon Radde Award as the “Outstanding Educator of the Year” by The Institute of Internal Auditors. He has been a recipient of the “Outstanding Contributor Award” from *The Internal Auditor*, and has been recognized by the Wisconsin Institute of Certified Public Accountants as their “Outstanding Educator.”

T. Flemming Ruud, Ph.D., CPA, is Professor of Internal and External Auditing at the University of St. Gallen since 1995, and since January 2002, professor of auditing at the University of Zurich (both 50%). He acts as the Managing Director of the Institute of Accounting, Controlling and Auditing, University St. Gallen (ACA-HSG) since 2000. Following studies at the City College in Oslo, Norway, he graduated in 1981 from the graduate program of Professional Accountancy at the Norwegian School of Economics and Business Administration (NHH) in Bergen, Norway. He passed the Norwegian State Authorized Public Accountant (CPA) exam in 1981. Following auditing practice and working as a technical manager at the Norwegian Institute of Public Accountants, he studied at the University of Utah, Salt Lake City, receiving the Ph.D. in 1988.

Flemming Ruud was Associate Professor with special responsibilities for the Graduate Auditing Program at the Norwegian School of Economics and Administration (1988 to 1994) and thereafter appointed Professor in Auditing at the Norwegian School of Management in Oslo, Norway, where he now is Adjunct Visiting Professor. His research areas encompass internal and external auditing, issues in financial aspects of corporate governance, internal control, and risk management in which he publishes extensively. Flemming Ruud is a member of several steering committees in academic and business ventures and a member of the board of the Swiss Institute of Internal Auditing (SIIA). He functions as an advisor to European academic institutions, auditing firms, governments, professional institutes, and large corporations, promoting the development of corporate governance, financial and operational auditing, risk management and control. He is the 2002 recipient of The Institute of Internal Auditors’ Leon Radde Educator of the Year Award.

Kay W. Tatum, Ph.D., CPA, is an associate professor of accounting at the University of Miami in Coral Gables, Florida. She joined the University of Miami's accounting department in 1986 after earning her Ph.D. at Texas Tech University. In 2002 she received the University of Miami's Excellence in Teaching Award, a university-wide award presented to six professors. She is a member of the AAA's Auditing Standards Committee, having served as chairperson of the committee from 2000-2002. She was a member of the AICPA's Task Force that developed SAS No. 84, *Communications between Predecessor and Successor Auditors*. She was a member of the Joint Working Group, a committee of practitioners, standard setters, and academics from the U.S., Canada, and the U.K. that studied how the large accounting firms are applying the audit risk model.

Kay is a coauthor of *Developments in the Audit Methodologies of Large Accounting Firms*, a monograph written by the academic members of the Joint Working Group. Kay is a member of the AICPA's International Auditing Standards Subcommittee. Her analysis of the differences between the U.S. and international auditing standards, "Analysis of International Standards on Auditing," is published in Appendix B of the *AICPA Professional Standards*. She is a contributing author to the book *Audit Committees: A Guide for Directors, Management, and Consultants*, which is published by Aspen Law & Business.

Marcia L. Weidenmier, Ph.D., CPA, is an assistant professor in the School of Accountancy in the College of Business and Industry at Mississippi State University. Prior to joining the faculty at Mississippi State University, she was an assistant professor of accounting at Texas Christian University (2001 - 2004). She received her B.B.A. in accounting at the College of William and Mary and her M.B.A. in information systems as well as her Ph.D. in accounting at the University of Texas at Austin. Before obtaining her Ph.D., Marcia worked as an information systems consultant at PricewaterhouseCoopers (then Price Waterhouse) in Chicago, IL.

Marcia teaches courses in accounting information systems. Her research investigates the impact of information technology on internal and external auditing, business processes, and internal controls. In addition to publishing in academic and professional journals, Marcia also explores how her research results can be applied in the classroom. In 2003 she was awarded the Outstanding Education Paper by the Information Systems Section of the AAA.

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RESEARCH TEAM

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Sridhar Ramamoorti, Ernst and Young

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CHAPTER 1
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Sridhar Ramamoorti

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The Professional Practices Framework for Internal Auditing (PPF) was designed by The IIA Board of Directors' Guidance Task Force to appropriately organize the full range of existing and developing practice guidance for the profession. Based on the definition of internal auditing, the PPF comprises *Ethics* and *Standards*, *Practice Advisories*, and *Development and Practice Aids*, and paves the way to world-class internal auditing.

This guidance fits into the Framework under the heading *Development and Practice Aids*.

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I. Background

The establishment, growth, and evolution of the contemporary internal auditing profession is closely intertwined with the history of The Institute of Internal Auditors (IIA), an organization founded in the United States in 1941. In the recently released edition of *60 Years of Progress Through Sharing*, chronicling the history of The IIA, internal auditing historian Dale L. Flesher notes:

“The IIA’s 60-year history is illustrious and each of the highlights featured in this 10-year narration [supplementing the 50-year history of The IIA] have contributed to the organization that The IIA is today:

- The primary international professional association dedicated to the promotion and development of the practice of internal auditing.
- The recognized authority, chief educator, and acknowledged leader in standards, certification, research, and technological guidance for the profession worldwide.
- Global headquarters for 76,400 members in 141 countries.” (Flesher & McIntosh, 2002, ix)

Considering The IIA’s rather humble origins — a small band of 24 charter members who held the inaugural IIA meeting in New York City¹ on December 9, 1941 — this worldwide expansion, continuing relevance, and increasing influence and recognition of The IIA and the internal auditing profession over the last 60 years constitutes remarkable growth and progress. Indeed, the internal auditing profession certainly appears poised for continued dynamic growth and promises to become “a profession for the 21st century.”²

II. Internal Auditing: An Historical Perspective

The demand for both external and internal auditing is sourced in the need to have some means of independent verification to reduce record-keeping errors, asset misappropriation, and fraud within business and nonbusiness organizations. The roots of auditing, in general, are intuitively described by accounting historian Richard Brown (1905, quoted in Mautz & Sharaf, 1961) as follows:

“The origin of auditing goes back to times scarcely less remote than that of accounting...Whenever the advance of civilization brought about the necessity of one man being intrusted to some extent with the property of another, the advisability of some kind of check upon the fidelity of the former would become apparent.”

As far back as 4000 B.C., historians believe, formal record-keeping systems were first instituted by organized businesses and governments in the Near East to allay their concerns about correctly accounting for receipts and disbursements and collecting taxes. Similar developments occurred with respect to the Zhao dynasty in China (1122-256 B.C.). The need for and indications of audits can be traced back to public finance systems in Babylonia, Greece, the Roman Empire, the City States of Italy, etc., all of which developed a detailed system of checks and counterchecks. Specifically, these governments were worried about incompetent officials prone to making bookkeeping errors and inaccuracies as well as corrupt officials who were motivated to perpetrate fraud whenever the opportunity arose. Even the Bible (referring to the period between 1800 B.C. and A.D. 95) explains the basic rationale for instituting controls rather straightforwardly: "...if employees have an opportunity to steal they may take advantage of it." The Bible also contains examples of internal controls such as the dangers of dual custody of assets, the need for competent and honest employees, restricted access, and segregation of duties (O'Reilly et al., 1998). Historically then, the emergence of double-entry bookkeeping in circa 1494 A.D. can be directly traced to the critical need for exercising stewardship and control. Throughout European history, for instance, fraud cases — such as the South Sea bubble of the 18th century, and the tulip scandal — provided the justification for exercising more control over managers.

Within a span of a couple of centuries, the European systems of bookkeeping and auditing were introduced into the United States. As business activities grew in size, scope, and complexity, a critical need for a separate internal assurance function that would verify the (accounting) information used for decision-making by management emerged. Management needed some means of evaluating not only the efficiency of work performed for the business but also the honesty of its employees. Around the turn of the 20th century, the establishment of a formal internal audit function to which these responsibilities could be delegated was seen as the logical answer. In due course, the internal audit function became responsible for "careful collection and interpretive reporting of selected business facts" to enable management to keep track of significant business developments, activities, and results from diverse and voluminous transactions (Mautz, 1964). Companies in the railroad,³ defense, and retail industries had long recognized the value of internal audit services, going far beyond financial statement auditing and devoted to furnishing reliable operating reports containing nonfinancial data such as "quantities of parts in short supply, adherence to schedules, and quality of the product" (Whittington & Pany, 1998). Similarly, the U.S. General Accounting Office (GAO) and numerous State Auditors' Offices, for instance, the State of Ohio Auditors' Office, have traditionally employed large numbers of internal auditors.

In sum, the collective effect of growing transaction complexity and volume, the owner/manager's ("principals") remoteness from the source of transactions and potential bias of

reporting parties (“agents”), technical (accounting) expertise required to review and summarize business activities in a meaningful way, need for organizational status to ensure independence and objectivity, as well as the procedural discipline necessary for being the “eyes and ears” of management all contributed to the creation of an internal audit department within business organizations. Starting as an internal business function primarily focused on protection against payroll fraud, loss of cash, and other assets, internal audit’s scope was quickly extended to the verification of almost all financial transactions, and still later, gradually moved from an “audit for management” emphasis to an “audit of management” approach⁴ (Reeve, 1986).

The critical importance and relevance of internal auditing to business, as well as the *raison d’être* for the establishment of The Institute of Internal Auditors in the United States, can best be gauged from the following visionary and prescient remarks by two of The IIA’s charter members (quoted in Flesher, 1996, pp. 1, 3):

“Necessity created internal auditing and is making it an integral part of modern business. No large business can escape it. If they haven’t got it now, they will have to have it sooner or later, and, if events keep developing as they do at present, they will have to have it sooner.” (Arthur E. Hald, 1944)

“The Institute is the outgrowth of the belief on the part of internal auditors that an organization was needed in the structure of American business to develop the true professional status of internal auditing...Although its roots are in accountancy, its key purpose lies in the area of management control. It comprises a complete intracompany financial and operational review.” (Robert B. Milne, 1945)

Nevertheless, in the early years after The IIA was established, internal auditing was still perceived as a closely related extension of the work of external auditors — they were frequently called upon to assist external auditors in financial statement reviews or perform accounting-related functions such as bank reconciliations. Internal auditors were seen to be playing a fairly modest role within organizations and had only a “limited responsibility in the total managerial spectrum” (Moeller & Witt, 1999).

Almost two decades after the founding of The IIA, the following definition of internal auditing, laying the ground for an “operational auditing” orientation,⁵ was presented by Brink and Cashin (1958):

“Internal auditing thus emerges as a special segment of the broad field of accounting, utilizing the basic techniques and method of auditing. The fact that the public

accountant and the internal auditor use many of the same techniques often leads to a mistaken assumption that there is little difference in the work or in ultimate objectives. The internal auditor, like any auditor, is concerned with the investigation of the validity of representations, but in his case the representations with which he is concerned cover a much wider range and have to do with many matters where the relationship to the accounts is often somewhat remote. In addition, the internal auditor, being a company man, has a more vital interest in all types of company operations and is quite naturally more deeply interested in helping to make those operations as profitable as possible. Thus, to a greater extent, management services comes to influence his thinking and general approach.”

Soon thereafter, the National Industrial Conference Board underscored the importance of internal auditing thus (Walsh, 1963):

“The widening gap between management and action has made it necessary to develop a series of controls by means of which the business may be administered efficiently. The internal auditor perfects and completes each of these activities by providing on-the-scene appraisal of each form of control. There is no known substitute for this activity.”

With respect to professional standards and professional responsibilities, the two most influential individuals in The IIA’s history were arguably Victor Z. Brink and Lawrence B. Sawyer,⁶ respectively. Already introduced as a pioneering figure in 20th century internal auditing, Victor Z. Brink, as The IIA’s first research director, was instrumental in getting The IIA’s *Statement of Responsibilities of the Internal Auditor* issued in 1947. The *Statement of Responsibilities of the Internal Auditor* clarified that while internal auditing primarily dealt with accounting and financial matters, matters of an operating nature also lay within its scope of activities. By 1957, the *Statement of Responsibilities of Internal Auditing* had been considerably broadened to include numerous services to management, such as:

1. Reviewing and appraising the soundness, adequacy, and application of accounting, financial, and operating controls.
2. Ascertaining the extent of compliance with established policies, plans, and procedures.
3. Ascertaining the extent to which company assets are accounted for, and safeguarded from, losses of all kinds.
4. Ascertaining the reliability of accounting and other data developed within the organization.
5. Appraising the quality of performance in carrying out assigned responsibilities.

Subsequently, in 1971, as chairman of the Research Committee, Lawrence Sawyer assumed the task of successfully revising the *Statement of Responsibilities*. The *Statement of Responsibilities* underwent further revisions in 1976, 1981, and 1990 to reflect the continuing and rapid evolution of the internal auditing profession.

In 1978, The IIA formally approved the *Standards for the Professional Practice of Internal Auditing (Standards)*, which had the following purposes:

- “1. Assist in communicating to others the role, scope, performance, and objectives of internal auditing.
2. Unify internal auditing throughout the world.
3. Encourage improved internal auditing.
4. Establish basis for consistent measurement of internal auditing operations.
5. Provide a vehicle by which internal auditing can be fully recognized as a profession.”

The *Standards* contained the following definition and objective of internal auditing:

“Internal auditing is an independent appraisal activity established within an organization as a service to the organization. It is a control which functions by examining and evaluating the adequacy and effectiveness of other controls. The objective of internal auditing is to assist members of the organization in the effective discharge of their responsibilities. To this end, internal auditing furnishes them with analyses, appraisals, recommendations, counsel, and information concerning the activities reviewed. The audit objective includes promoting effective control at reasonable cost.”

The *Standards* also laid out the criteria, using which, internal audit department operations should be evaluated and measured. They covered various aspects of internal auditing within organizations such as independence, professional proficiency, scope of work, performance of audit work, and management of the internal audit department. *Standards* interpretations were enshrined in *Statements on Internal Auditing Standards (SIAS)*; some examples of these were specific SIAS focusing on control concepts, risk assessment, preventing and investigating fraud, relationships with independent auditors, communication with board of directors, assignment planning, and follow-up on audit findings.

By this time, in terms of planning, fieldwork, and reporting, the basic steps in an operational audit had been sequenced as follows: perform a preliminary survey; develop the audit program; perform the fieldwork; prepare the working papers; develop a list of, and prioritize, audit

findings; discuss findings with the auditee; and, finally, prepare and present the audit report. The *Standards* and the SIAS served as the measures of the quality of performance of internal audit work engagements.

There was no doubt that, by the late 1970s, the field of internal auditing had earned the right to be called a “full-fledged profession,” even using James Carey’s (1969) seven, fairly stringent qualifying conditions for a “profession.” Sometime after 1974, when the Certified Internal Auditor (CIA) exam was sponsored by The IIA, internal auditing had a sufficiently respectable profile and merited being called an established profession because: it had a body of specialized knowledge (common body of knowledge approved in 1972), a formal educational process (a minimum prescribed course of formal education), standards governing admission as a full member of The IIA (prescribed course of study, passing CIA exam, professional experience requirements, and the *Standards*), a Code of Ethics (first approved in 1968), a recognized status indicated by a license or special designation (the CIA, or the MIIA⁷, recognized in several jurisdictions worldwide), a public interest in the work that the practitioners perform (perhaps more evident in the work performed by internal auditors in government, education, and nonprofit organizations rather than in the private sector), and a recognition by professionals of a social obligation (again, perhaps more evident in government, education, and nonprofit organizations).

For the internal audit function to raise its organizational stature, it was critical that it forge a strong relationship with “those charged with organizational governance,” and communicate directly to the audit committee. There is much evidence today that such a reporting relationship is being widely viewed as a best practice in the most progressive corporations committed to enhancing governance structure and processes. In an early but landmark study on corporate audit committees, Mautz & Neumann (1977) stated:

“For the most part the audit committee is viewed as a bridge between the board of directors and the auditors...To fulfill their responsibilities to shareholders and the public at large, audit committee members have had to become more interested in, and better informed on, auditing matters. Management also has become aware of the necessity of protecting itself through adequate attention to internal controls and effective audits. Consequently, it has become more responsive to auditor suggestions and audit committee requests for information.”

In similar vein, authors Brink & Witt (1982) noted that:

“In most situations the internal auditing group has moved to very high levels in all operational areas and has established itself as a valued and respected part of the top

management effort. To an increasing extent also the internal auditor is serving the board of directors — usually via the audit committee of that board.”

By 1993, the *Statement of Responsibilities of Internal Auditing* noted that “the scope of internal auditing encompasses the examination and evaluation of the adequacy and effectiveness of the organization’s system of internal control and the quality of performance in carrying out assigned responsibilities.” At this time, the scope of internal auditing included:

1. Reviewing the reliability and integrity of financial and operating information and the means used to identify, measure, classify, and report such information.
2. Reviewing the systems established to ensure compliance with those policies, plans, procedures, laws, and regulations that could have a significant impact on operations and reports, and determining whether the organization is in compliance.
3. Reviewing the means of safeguarding assets and, as appropriate, verifying the existence of such assets.
4. Appraising the economy and efficiency with which resources are employed.
5. Reviewing operations or programs to ascertain whether results are consistent with established objectives and goals and whether the operations or programs are being carried out as planned.”

It was well-understood by the early 1990s that internal auditors, depending on their particular organization’s needs and preferences, worked in several areas: compliance audits, audits of transaction cycles, investigating fraud and other irregularities, evaluating operational efficiency, analysis, measurement and reporting of operational and organization-wide risks, and other assurance and consulting activities. They performed a combination of *financial* reviews and audits, *operational* reviews and audits (sometimes called *program audits*, *performance audits*, *comprehensive audits*, and other similar descriptive labels), *management* audits, and *compliance* audits. In performing many of these activities, internal auditors made their approach risk-based and controls-focused. They also made extensive use of sophisticated technology applications in carrying out audits.

Gradually, internal auditors also began to exhibit “industry specialization” in terms of their domain knowledge of specific industries such as health care, oil, gas, and energy, defense, financial services, transportation, wholesale and retail, technology, telecommunications, media and entertainment, government and nonprofits, education, etc. Internal audit staff began to come from diverse backgrounds, including a large proportion of non-accounting majors, and women gained prominence within the profession. Internal auditors also became much more internationally oriented. In many cases, internal auditing became rather opportunistic, and internal auditors began to participate in and contribute to “special projects” on a

contingency basis, whether performing the role of risk officers, ethics officers, or compliance officers, as the situation demanded.

III. Contemporary Practice of Internal Auditing: Environmental Changes, New Roles and Responsibilities, New Definition

As the internal auditing profession became more firmly established, it responded quickly to new demands from significant regulatory and legislative mandates, as well as high-profile (inter)national reports: the passage of the Foreign Corrupt Practices Act (1977), particularly its emphasis on internal controls; the issuance of the Report of the National Commission on Fraudulent Financial Reporting (Treadway Commission Report, 1987); the Report of the Committee of Sponsoring Organizations (COSO) of the Treadway Commission (COSO, 1992); as well as the subsequent internal control frameworks presented by the Cadbury Committee Report (Cadbury Report, UK); the Criteria of Control Committee (CoCo Report, Canada); and the King Committee (King Report, South Africa); the amendments to the U.S. Federal Sentencing Guidelines (1995); recent changes in the New York Stock Exchange rules regarding the structure and composition of the Board of Directors of listed companies as well as the requirement for all publicly listed companies to have an internal audit function;⁸ the newly passed Sarbanes-Oxley Act of 2002; and ongoing calls for better organizational governance.

The business environment has experienced rapid and revolutionary change with far reaching consequences for organizations worldwide. Management responses to fierce global competition have included improved quality and risk management initiatives, reengineered structures and processes, and greater accountability — all needing more timely, reliable, and relevant information for decision-making. Organizations are also scrambling to put in place more effective governance structures and processes. In such a climate, it is no surprise that the internal audit function is viewed as the most qualified group of professionals to help with such experimentation with improved governance as well as support key governance processes: for monitoring the controls over, and for evaluating the operational effectiveness of, these management strategies and initiatives. However, to take advantage of this tremendous surge in the demand for their services, not only do internal auditors need a considerably enhanced repertoire of skills, attributes, and competencies but they also need to commensurately raise their organizational status and profile and align themselves appropriately within their respective organizations.

Ratliff & Reding (2002, p. xi) capture the expanded responsibilities and skill-set of the 21st century auditor as follows:

“Auditors of the 21st century must be prepared to ‘audit’ virtually everything — operations (including control systems), performance, information and information systems, legal compliance, financial statements, fraud, environmental reporting and performance, and quality. Auditors must master:

- Analytical and critical thinking skills.
- An efficient method to gain an adequate understanding of any auditee — individual, organization, or system.
- New concepts, principles, and techniques of internal control.
- An awareness and understanding of risk and opportunity related to both the auditee and the auditors.
- Development of general and specific audit objectives for any audit project.
- Selection, collection (using a broad array of audit procedures), evaluation, and documentation of audit evidence, including the use of statistical and non-statistical induction.
- Reporting audit results in a variety of formats to a variety of recipients.
- Audit follow-up.
- Professional ethics.
- Audit technology applicable across a variety of types of audit reports.

In addition, auditors must understand the concepts of auditor independence and objectivity as these concepts relate to different types of audits by different types of auditors. They must fully understand cost and materiality implications of risk, opportunity, and audit evidence.”

In similar vein, Moeller & Witt (1999, p. 14-15) list the following necessary personal attributes to be a successful internal auditor (in addition to technical and professional qualifications, this is a formidable list): (1) basic fairness and integrity; (2) dedication to the organization’s interests; (3) reasonable humility; (4) professional poise; (5) empathy; (6) role consistency; (7) curiosity; (8) critical attitude; (9) alertness; (10) persistence; (11) energy; (12) self-confidence; (13) courage; and (14) ability to make sound judgments.

The new roles, responsibilities, and attributes of the contemporary internal auditor envisaged by these authors constitute a tall order. It is to understand these elements better that The IIA Research Foundation sponsored the wide-ranging, three-volume *Competency Framework for Internal Auditing (CFIA)* study (Birkett et al., 1999). This globally conducted study clearly pointed out the need for internal auditors to possess a radically expanded set of skills

and competencies to cope with massive change and complexity in both private and public sector operations. A Delphi study, conducted as part of the comprehensive *CFIA* study, concluded that in the context of burgeoning change and uncertainty, the internal audit function adds value by providing assurances to those charged with organizational governance that organizational risk exposures are well understood, being monitored, and under control. A further conclusion of the Delphi study was that internal audit activities in the future would most likely be conducted through flexible, and many times self-directed, work teams featuring varying mixes of internal auditing specialists, application specialists, and general organizational personnel.

Another seminal IIA Research Foundation study by Rittenberg & Covalleski (1997) described and assessed the impact of the “outsourcing phenomenon” and made the following summary points for the rapidly evolving internal auditing profession: (1) There is a monumental change underway in the way in which auditing is being done; (2) Internal auditing work can be done by non-employees; (3) Audit independence is a problem, but outsourcing is not the “make or break” issue; (4) Existing internal auditing departments should act as if they were going to be “market tested”; and (5) The IIA should rethink its process for establishing standards and policies.

In the late 1990s, partly as a result of insightful, IIA-sponsored research studies as well as numerous forward-thinking articles in The IIA’s flagship journal, *Internal Auditor*, The IIA recognized a fundamental need to formally reassess and evaluate the profession’s governing principles, orientation, and knowledge base of competencies and skills. There was a fourfold purpose behind The IIA’s strategic document “A Vision for the Future,” viz., enhance the economic value of internal auditing; ensure consistently high quality internal auditing; strengthen the professional standing of internal auditing; and achieve broad market awareness of internal auditing (GTF Report, 1999). The Guidance Task Force carried out a comprehensive review of the existing professional standards, the code of ethics, and even the definition of internal auditing. They concluded that the old terminology failed to “adequately reflect the evolution of practice [or] effectively promote the internal audit profession in the competitive marketplace” (Krogstad, Ridley & Rittenberg, 1999). The new Professional Practices Framework embraced the following purposes (GTF Report, 1999):

- “1. Provide a flexible framework for supporting and promoting a broad range of value-adding internal auditing activities.
2. Delineate basic principles that represent the practice of internal auditing as it should be throughout the world.
3. Foster improved organizational processes and operations.
4. Require a quality assurance mechanism to ensure compliance with the *Standards*.

5. Achieve “preferred provider” recognition in the marketplace based on worldwide reputation for high quality internal auditing services.”

The new definition of internal auditing is designed to accommodate the profession’s expanding role and responsibilities:

“Internal auditing is an independent, objective assurance and consulting activity designed to add value and improve an organization’s operations. It helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes.”

Chapman & Anderson (2002) explain that this new definition of internal auditing presents a new image of the profession in six significant ways:

1. As **an objective activity**, not necessarily established within the organization, the revised definition permits internal auditing services to be provided by “outsiders,” in effect acknowledging that quality internal audit services can now be obtained through outsourcing.
2. By emphasizing that the scope of internal auditing encompasses **assurance and consulting** activities, the new definition projects internal auditing as proactive and customer-focused, and concerned with key issues in control, risk management, and governance.
3. By explicitly stating that internal auditing is **designed to add value and improve an organization’s operations**, the new definition underscores the significant contribution that internal auditing makes for any organization.
4. By **considering the whole organization**, the new definition perceives internal auditing’s mandate much more broadly, charging it with helping the organization accomplish overall objectives.
5. The new definition assumes that controls only exist to help the organization manage its risk and promote effective governance. Such a perspective considerably **broadens the horizons** of internal auditing and expands its working domain to include risk management, control, and governance processes.
6. The new definition accepts that the internal auditing profession’s legacy, consisting of its **unique franchise** in being a standards-based profession, may well be its most

enduring and valuable asset. Rigorous standards provide the basis for crafting a documented, disciplined, and systematic process that assures quality performance on internal audit engagements.

The new definition of internal auditing is enshrined in a comprehensive *Professional Practices Framework* (IIA, 2002a), a structural blueprint of how the body of knowledge in internal auditing and the applicable guidance fits together. The *Professional Practices Framework* consists of three categories of guidance: *Standards and Ethics*⁹ (mandatory guidance), *Practice Advisories* (strongly recommended), and *Development & Practice Aids* (helpful reference materials developed or endorsed by The IIA). The Framework organizes the full range of guidance in a manner that is readily accessible and timely for internal audit practitioners. It is expected to be responsive to the needs of internal audit practitioners and grow more robust in the coming years. The IIA *Standards* and elements of the *Professional Practices Framework* are available on the IIA's Web site at <www.theiia.org>

It is evident from the preceding historical review and summary that internal auditing has evolved remarkably over the last 60 years and has gained an increasingly important role within organizations, whether in industry, government, or the nonprofit sector. Alongside this development, the internal auditing function today accepts a broader responsibility toward the organization itself and its stakeholders. By offering expanded assurance and consulting services to the organization, i.e., in particular to the audit committee of the board of directors as well as to executive management, the internal audit function effectively contributes to improved organizational governance. Furthermore, information assured by internal auditors enhances both internal and external decision-making, thereby improving the deployment, and the effective and efficient use of scarce organizational and economic resources.

Based on an understanding of how contemporary organizations function and the relevant influences, the internal audit function and its activities will be discussed using myriad perspectives in the following chapters of the *Research Opportunities in Internal Auditing* monograph. These perspectives will provide a richer and fuller understanding of the context of the internal auditing function and its activities in modern organizations and thus help generate the types of basic and applied research questions that are likely to be of serious and enduring interest to academics and practitioners.

IV. Prospects for the Internal Auditing Profession

Contemporary organizations are increasingly information-dependent and knowledge-intensive, and engage in extremely specialized and sophisticated operations across industries and sectors globally. The development of new organizational forms in the information age,

with the forging of strategic alliances and the emergence of virtual organizations, has dramatically altered the purpose and functioning of organizations as well as the attendant needs for exercising control.¹⁰ The controls landscape within organizations today is quite different from those existing in the industrial-era traditional organizations for most of the 20th century. In this radically changed business environment, the internal audit function has become a major support function for management, the audit committee, the board of directors, the external auditors, as well as key stakeholders. Properly conceived and implemented, the internal audit function can play a critical role in promoting and supporting effective organizational governance.

As multinational enterprises have recognized an increasing array of risks facing the organization, it is no surprise that the demand for risk management professionals has risen dramatically (cf. Bernstein, 1996). Any disciplined approach to growth and value creation assumes that the organization is managing all manner of significant and likely risks effectively. Risk can be considered both at the macro or portfolio level (enterprise-wide risk management) as well as the micro or departmental level. Risk management is frequently an area in which internal audit can contribute greatly by furnishing analyses and providing wise counsel to top management and the board of directors. The internal audit function also performs micro-level risk assessment for its own purposes to identify those areas which demand the greatest efforts on the part of the internal audit function and for achieving appropriate audit coverage of the audit universe over defined periods of time (Ramamoorti & Traver, 1998). Internal auditors can play a significant “partnering” role with management in establishing and monitoring business processes for the assessment, measurement, and reporting of risks in general and in implementing enterprise risk management initiatives. Modern approaches to risk-based internal auditing allow for the assessment of risks and linking them to business objectives systematically (McNamee & Selim, 1998; Walker, Shenkir, & Barton, 2002; DeLoach, 2000). Indeed, the internal audit function can facilitate the processes by which business units “can develop high quality risk assessments,” and this can in turn be very useful to the internal audit function in planning its own work, primarily by enhancing the quality of decision-relevant information and minimizing duplication of effort (Walker et al., 2002).

One of the key premises today in any organization is that the presence of a strong internal audit function can go a long way in supporting and promoting effective organizational governance. Much of organizational governance has to do with effective monitoring and oversight of risk management, and internal auditors, if perceived as “risk management experts,” can expect to play an immensely significant and high-profile role within organizations in the coming decades. With the recent New York Stock Exchange requirement for listed companies to have an internal audit function, the profile of the internal audit function has

been raised considerably. By being given a seat at the table where high-level discussions of organizational governance occur, the horizons for the profession have been considerably expanded and its opportunities to add value have grown exponentially. However, the challenge remains for internal audit professionals to develop a keen understanding of the value proposition they offer and manage their perception and image both within and without organizations. Once the internal audit function gains the trust and confidence of those charged with governance, it can proceed to deliver outstanding performance and value using the combined wealth of knowledge and experience possessed by its personnel in control best practices, risk monitoring and management, and governance structures and processes. Specifically, with all of the Big Four professional services firms demonstrating a strong interest in developing their internal audit co-sourcing practices, the internal audit profession is poised for significant international impact. Such globalization of internal auditing activities and the attendant recognition of the value added by the internal audit function are indeed welcome trends.

In conclusion, the 21st century presents much promise and unprecedented growth opportunities for the internal auditing profession. However, developments in practice must be carefully studied by interested academics so that a body of knowledge is systematically built up and transmitted to future generations of internal auditing professionals. The extant body of knowledge should not only be critiqued and constantly refined to reflect the current state of the art, but should also encourage and stimulate, through research, leading edge thinking that so often produces innovations in practice. We believe that this report constitutes an excellent source to start the journey that will yield important insights into internal auditing research, practice, and education.

V. Summary of Research Issues

The historical overview of internal auditing and the contemporary expectations from, and roles and responsibilities of, the internal audit function within organizations suggests a variety of research questions for exploration and investigation.

Appearing in the Appendix is a series of potential research questions organized under captions such as: historical/archival/policy-oriented research, contemporary practice: state of the art of internal auditing, theory/common body of knowledge/education, prospects, and miscellaneous. We hope that interested academics would benefit from careful study of the suggested research questions and the lines of inquiry that they open up for future research investigation. (Note: The list of research questions in the Appendix is intended to be merely illustrative and is by no means exhaustive).

VI. Appendix I: Chapter Research Questions

Historical/Archival/Policy-Oriented Research

- How can we develop a simultaneous and integrated understanding of the global historical development of the internal audit profession? (i.e., this might require a comparative Geographic Time Tables of History approach)
- How has the evolution and development of internal auditing differed across regions of the world? What has been the most common triggering event? (e.g., massive fraud and business scandals followed by legislation supporting internal auditing)
- Would comparative historical research, for instance, on the public policy implications of prohibiting the joint supply of external and internal auditing by the same public accounting firm yield useful lessons?
- Why does the status of the internal audit function frequently seem to be a direct consequence of organizational leadership (C-suite executives) attitudes toward and expectations from internal audit? Would historical case studies of the long-standing internal audit functions in companies like J.C. Penney and Ford Motor Company shed light on this?
- Historically, why have developments in internal auditing typically lagged developments in external auditing? (e.g., because internal auditing has not been yoked with organizational governance in the past? Not seen directly to contribute to the public interest? Not mandated or legislated?) In this era of investor capitalism, is this going to change with the suddenly heightened profile of the internal auditing profession? Does the chief audit executive, in his or her new role, need directors & officers (D & O) liability insurance coverage?
- How can we assess the impact of economic vs. cultural variables on the evolution of the internal auditing profession?
- To what extent are internal auditor attitudes and posturing reminiscent of “patterns of behavior” (cultural process variations) versus “patterns for behavior” (variations in cultural ends or ideals) in organizations?

Contemporary Practice: Internal Auditing, State of the Art

- What are some common features of internal audit methodologies, approaches, and tools used by world-class organizations? Can we distill best practices from such “in search of excellence” studies?
- What impact is industry specialization having on internal audit professionals and on the internal audit function? What about the impact of technology and globalization?
- Why have internal auditors become so “opportunistic” in taking on a series of special projects on a contingency basis?
- How valuable is it to perform *ex ante* as well as *ex post* “event studies” of the promulgation of IIA standards? Have the *Standards* been effective in influencing practice? Do they serve as measures of the quality of performance of internal audit engagements?
- How good is the alignment between organizational goals and the internal audit function’s objectives, especially when internal auditors also assume the role of change agents?

Theory/Common Body of Knowledge/Education

- What are the fundamental postulates of internal auditing? What are the epistemological foundations of internal auditing, including relevant concepts and constructs, i.e., ways of knowing, quality and quantity of evidence, risk metrics, problems of fact and problems of value, justification, independence and objectivity, process and methodology, etc.? How and in what respects has internal auditing diverged from external auditing over the years? What is the “Philosophy of Internal Auditing”? (cf. Mautz & Sharaf, 1961, a theoretical approach)
- Do we need a follow up to the *Competency Framework for Internal Auditing (CFIA)* study every five years or so? Should we regard internal auditing as an expanding profession and take appropriate steps to examine its structure, scope, and content on a global basis and with sufficient frequency to keep the common body of knowledge current and relevant?

- How should internal auditing, a pragmatic field like surgery, be taught at the university level? How do we instill a “lifelong learning” orientation in those who wish to become internal auditing practitioners?
- What does the exercise of professional judgment mean in the context of internal auditing? How do we design mechanisms that effectively capture the experience and expertise of seasoned internal audit professionals and help with expert-novice knowledge transfer?

Prospects

- How could we try to chart the future of internal auditing? To what extent would studying disparate trends in organizational governance, technology, globalization, business complexity, demographic trends, education, etc. help?
- What might we find from a systematic Porter-type “Five Forces Analysis” for internal auditing to trace the development, current state, and future preparedness of the internal auditing profession?

Miscellaneous

- How useful is it to look at internal auditing theory using a “systems perspective”? Can organizational studies that adopt a holistic, integrated view and consider internal auditing in the context of the entire organization provide useful insights?
- Does the fact that the CIA is a global designation instill pride and *esprit de corps* in members? Does the fact that they belong to a global profession motivate members to hold themselves out accordingly and exhibit greater professionalism?

Footnotes

¹The inaugural New York City meeting location was no doubt because of the city's flourishing commercial activity and significance, but also because two of the earliest doctoral dissertations on the then fledgling subject of internal auditing were written by distinguished academics, both trained at Columbia University, New York City. These two pioneers of internal auditing — Dr. C. Aubrey Smith, later affiliated with the University of Texas at Austin, and Dr. Victor Z. Brink, later affiliated with Ford Motor Company and Columbia University — went on to write influential books on the subject, *Internal Audit Control* (Smith, 1933) and *Internal Auditing* (Brink, 1941).

²Interestingly, “Internal Auditing: A Profession for the 21st Century” was the 1996-97 theme chosen by then IIA Chairman of the Board Anthony J. Ridley to describe his vision for the profession during his year at the helm.

³In the United States, by the mid-19th century, internal auditors were actively assisting external auditors in investigating internal frauds at railroad companies in New York and New Haven (Previts & Merino, 1998).

⁴However, this transition has frequently not occurred in many organizations; the primary stumbling block is best captured by the phrase: “the issue of serving two masters.” On the one hand, internal auditors are typically employed by the organization (management) and need the support and cooperation of executive management to perform their duties effectively; on the other hand, when internal auditors are asked by the organization's audit committee of the board of directors to critique management performance, they must answer fearlessly recognizing their ultimate allegiance to those charged with organizational governance, not management. This unhappy situation of reporting to two masters creates much friction and tension for internal auditors. Indeed, if delicate issues are not managed tactfully, the ensuing breakdown in communications and cooperation can lead to a compromise of the internal audit function's independence and objectivity and/or a diminished organizational status for the internal audit function.

⁵In 1964, Bradford Cadmus published his seminal *Operational Auditing Handbook*. Earlier in 1947, he had been appointed The IIA's first paid managing director (Flesher, 1996).

⁶Lawrence Sawyer is also well-known for having written the celebrated book, *The Practice of Modern Internal Auditing*, now carrying the eponymous title, *Sawyer's Internal Auditing* (Sawyer & Dittenhofer, 1996, 4th Ed.). Larry Sawyer passed away in September 2002, just as this chapter was being finalized.

⁷MIIA = Member of the Institute of Internal Auditors, is a professional designation still used in the UK.

⁸The NYSE requirement for all publicly listed companies to have an internal audit function is a watershed event in the continued evolution of internal auditing in the United States. Such a mandate reinforces the credibility and legitimacy of the internal audit function for large, well-managed companies.

⁹Mandatory guidance consists of core materials: the Code of Ethics and *Standards for the Professional Practice of Internal Auditing (Standards)*. The purpose of The Institute's Code of Ethics is to promote an ethical culture in the profession of internal auditing. The *Standards* are the criteria by which the operations of an internal audit department or function are evaluated or measured. They are intended to represent the practice of internal auditing as it should be. Three sets of *Standards* have been issued: Attribute, Performance, and Implementation Standards. The Attribute Standards address the attributes of the organizations and individuals performing internal audit services. The Performance Standards describe the nature of internal audit services and provide quality criteria against which the performance of these services can be measured. The Attribute and Performance Standards apply to all internal audit services. The Implementation Standards expand upon the Attribute and Performance Standards, providing guidance applicable in specific types of engagements. These standards ultimately may deal with industry-specific, regional, or specialty types of audit services (IIA, 2002a, 2002b).

¹⁰One indicator of the sophistication and complexity of internal audit activities is the number of specialty certifications sponsored by The IIA, beyond the generic Certified Internal Auditor (CIA) designation: Certificate in Control Self-Assessment (CCSA), Certified Government Auditing Professional (CGAP), and more recently, Certified Financial Services Auditor (CFSA).

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CHAPTER 1
INTERNAL AUDITING:
HISTORY, EVOLUTION, AND PROSPECTS

Sridhar Ramamoorti

Disclosure

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The Professional Practices Framework for Internal Auditing (PPF) was designed by The IIA Board of Directors' Guidance Task Force to appropriately organize the full range of existing and developing practice guidance for the profession. Based on the definition of internal auditing, the PPF comprises *Ethics* and *Standards*, *Practice Advisories*, and *Development and Practice Aids*, and paves the way to world-class internal auditing.

This guidance fits into the Framework under the heading *Development and Practice Aids*.

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I. Background

The establishment, growth, and evolution of the contemporary internal auditing profession is closely intertwined with the history of The Institute of Internal Auditors (IIA), an organization founded in the United States in 1941. In the recently released edition of *60 Years of Progress Through Sharing*, chronicling the history of The IIA, internal auditing historian Dale L. Flesher notes:

“The IIA’s 60-year history is illustrious and each of the highlights featured in this 10-year narration [supplementing the 50-year history of The IIA] have contributed to the organization that The IIA is today:

- The primary international professional association dedicated to the promotion and development of the practice of internal auditing.
- The recognized authority, chief educator, and acknowledged leader in standards, certification, research, and technological guidance for the profession worldwide.
- Global headquarters for 76,400 members in 141 countries.” (Flesher & McIntosh, 2002, ix)

Considering The IIA’s rather humble origins — a small band of 24 charter members who held the inaugural IIA meeting in New York City¹ on December 9, 1941 — this worldwide expansion, continuing relevance, and increasing influence and recognition of The IIA and the internal auditing profession over the last 60 years constitutes remarkable growth and progress. Indeed, the internal auditing profession certainly appears poised for continued dynamic growth and promises to become “a profession for the 21st century.”²

II. Internal Auditing: An Historical Perspective

The demand for both external and internal auditing is sourced in the need to have some means of independent verification to reduce record-keeping errors, asset misappropriation, and fraud within business and nonbusiness organizations. The roots of auditing, in general, are intuitively described by accounting historian Richard Brown (1905, quoted in Mautz & Sharaf, 1961) as follows:

“The origin of auditing goes back to times scarcely less remote than that of accounting...Whenever the advance of civilization brought about the necessity of one man being intrusted to some extent with the property of another, the advisability of some kind of check upon the fidelity of the former would become apparent.”

As far back as 4000 B.C., historians believe, formal record-keeping systems were first instituted by organized businesses and governments in the Near East to allay their concerns about correctly accounting for receipts and disbursements and collecting taxes. Similar developments occurred with respect to the Zhao dynasty in China (1122-256 B.C.). The need for and indications of audits can be traced back to public finance systems in Babylonia, Greece, the Roman Empire, the City States of Italy, etc., all of which developed a detailed system of checks and counterchecks. Specifically, these governments were worried about incompetent officials prone to making bookkeeping errors and inaccuracies as well as corrupt officials who were motivated to perpetrate fraud whenever the opportunity arose. Even the Bible (referring to the period between 1800 B.C. and A.D. 95) explains the basic rationale for instituting controls rather straightforwardly: "...if employees have an opportunity to steal they may take advantage of it." The Bible also contains examples of internal controls such as the dangers of dual custody of assets, the need for competent and honest employees, restricted access, and segregation of duties (O'Reilly et al., 1998). Historically then, the emergence of double-entry bookkeeping in circa 1494 A.D. can be directly traced to the critical need for exercising stewardship and control. Throughout European history, for instance, fraud cases — such as the South Sea bubble of the 18th century, and the tulip scandal — provided the justification for exercising more control over managers.

Within a span of a couple of centuries, the European systems of bookkeeping and auditing were introduced into the United States. As business activities grew in size, scope, and complexity, a critical need for a separate internal assurance function that would verify the (accounting) information used for decision-making by management emerged. Management needed some means of evaluating not only the efficiency of work performed for the business but also the honesty of its employees. Around the turn of the 20th century, the establishment of a formal internal audit function to which these responsibilities could be delegated was seen as the logical answer. In due course, the internal audit function became responsible for "careful collection and interpretive reporting of selected business facts" to enable management to keep track of significant business developments, activities, and results from diverse and voluminous transactions (Mautz, 1964). Companies in the railroad,³ defense, and retail industries had long recognized the value of internal audit services, going far beyond financial statement auditing and devoted to furnishing reliable operating reports containing nonfinancial data such as "quantities of parts in short supply, adherence to schedules, and quality of the product" (Whittington & Pany, 1998). Similarly, the U.S. General Accounting Office (GAO) and numerous State Auditors' Offices, for instance, the State of Ohio Auditors' Office, have traditionally employed large numbers of internal auditors.

In sum, the collective effect of growing transaction complexity and volume, the owner/manager's ("principals") remoteness from the source of transactions and potential bias of

reporting parties (“agents”), technical (accounting) expertise required to review and summarize business activities in a meaningful way, need for organizational status to ensure independence and objectivity, as well as the procedural discipline necessary for being the “eyes and ears” of management all contributed to the creation of an internal audit department within business organizations. Starting as an internal business function primarily focused on protection against payroll fraud, loss of cash, and other assets, internal audit’s scope was quickly extended to the verification of almost all financial transactions, and still later, gradually moved from an “audit for management” emphasis to an “audit of management” approach⁴ (Reeve, 1986).

The critical importance and relevance of internal auditing to business, as well as the *raison d’être* for the establishment of The Institute of Internal Auditors in the United States, can best be gauged from the following visionary and prescient remarks by two of The IIA’s charter members (quoted in Flesher, 1996, pp. 1, 3):

“Necessity created internal auditing and is making it an integral part of modern business. No large business can escape it. If they haven’t got it now, they will have to have it sooner or later, and, if events keep developing as they do at present, they will have to have it sooner.” (Arthur E. Hald, 1944)

“The Institute is the outgrowth of the belief on the part of internal auditors that an organization was needed in the structure of American business to develop the true professional status of internal auditing...Although its roots are in accountancy, its key purpose lies in the area of management control. It comprises a complete intracompany financial and operational review.” (Robert B. Milne, 1945)

Nevertheless, in the early years after The IIA was established, internal auditing was still perceived as a closely related extension of the work of external auditors — they were frequently called upon to assist external auditors in financial statement reviews or perform accounting-related functions such as bank reconciliations. Internal auditors were seen to be playing a fairly modest role within organizations and had only a “limited responsibility in the total managerial spectrum” (Moeller & Witt, 1999).

Almost two decades after the founding of The IIA, the following definition of internal auditing, laying the ground for an “operational auditing” orientation,⁵ was presented by Brink and Cashin (1958):

“Internal auditing thus emerges as a special segment of the broad field of accounting, utilizing the basic techniques and method of auditing. The fact that the public

accountant and the internal auditor use many of the same techniques often leads to a mistaken assumption that there is little difference in the work or in ultimate objectives. The internal auditor, like any auditor, is concerned with the investigation of the validity of representations, but in his case the representations with which he is concerned cover a much wider range and have to do with many matters where the relationship to the accounts is often somewhat remote. In addition, the internal auditor, being a company man, has a more vital interest in all types of company operations and is quite naturally more deeply interested in helping to make those operations as profitable as possible. Thus, to a greater extent, management services comes to influence his thinking and general approach.”

Soon thereafter, the National Industrial Conference Board underscored the importance of internal auditing thus (Walsh, 1963):

“The widening gap between management and action has made it necessary to develop a series of controls by means of which the business may be administered efficiently. The internal auditor perfects and completes each of these activities by providing on-the-scene appraisal of each form of control. There is no known substitute for this activity.”

With respect to professional standards and professional responsibilities, the two most influential individuals in The IIA’s history were arguably Victor Z. Brink and Lawrence B. Sawyer,⁶ respectively. Already introduced as a pioneering figure in 20th century internal auditing, Victor Z. Brink, as The IIA’s first research director, was instrumental in getting The IIA’s *Statement of Responsibilities of the Internal Auditor* issued in 1947. The *Statement of Responsibilities of the Internal Auditor* clarified that while internal auditing primarily dealt with accounting and financial matters, matters of an operating nature also lay within its scope of activities. By 1957, the *Statement of Responsibilities of Internal Auditing* had been considerably broadened to include numerous services to management, such as:

1. Reviewing and appraising the soundness, adequacy, and application of accounting, financial, and operating controls.
2. Ascertaining the extent of compliance with established policies, plans, and procedures.
3. Ascertaining the extent to which company assets are accounted for, and safeguarded from, losses of all kinds.
4. Ascertaining the reliability of accounting and other data developed within the organization.
5. Appraising the quality of performance in carrying out assigned responsibilities.

Subsequently, in 1971, as chairman of the Research Committee, Lawrence Sawyer assumed the task of successfully revising the *Statement of Responsibilities*. The *Statement of Responsibilities* underwent further revisions in 1976, 1981, and 1990 to reflect the continuing and rapid evolution of the internal auditing profession.

In 1978, The IIA formally approved the *Standards for the Professional Practice of Internal Auditing (Standards)*, which had the following purposes:

- “1. Assist in communicating to others the role, scope, performance, and objectives of internal auditing.
2. Unify internal auditing throughout the world.
3. Encourage improved internal auditing.
4. Establish basis for consistent measurement of internal auditing operations.
5. Provide a vehicle by which internal auditing can be fully recognized as a profession.”

The *Standards* contained the following definition and objective of internal auditing:

“Internal auditing is an independent appraisal activity established within an organization as a service to the organization. It is a control which functions by examining and evaluating the adequacy and effectiveness of other controls. The objective of internal auditing is to assist members of the organization in the effective discharge of their responsibilities. To this end, internal auditing furnishes them with analyses, appraisals, recommendations, counsel, and information concerning the activities reviewed. The audit objective includes promoting effective control at reasonable cost.”

The *Standards* also laid out the criteria, using which, internal audit department operations should be evaluated and measured. They covered various aspects of internal auditing within organizations such as independence, professional proficiency, scope of work, performance of audit work, and management of the internal audit department. *Standards* interpretations were enshrined in *Statements on Internal Auditing Standards (SIAS)*; some examples of these were specific SIAS focusing on control concepts, risk assessment, preventing and investigating fraud, relationships with independent auditors, communication with board of directors, assignment planning, and follow-up on audit findings.

By this time, in terms of planning, fieldwork, and reporting, the basic steps in an operational audit had been sequenced as follows: perform a preliminary survey; develop the audit program; perform the fieldwork; prepare the working papers; develop a list of, and prioritize, audit

findings; discuss findings with the auditee; and, finally, prepare and present the audit report. The *Standards* and the SIAS served as the measures of the quality of performance of internal audit work engagements.

There was no doubt that, by the late 1970s, the field of internal auditing had earned the right to be called a “full-fledged profession,” even using James Carey’s (1969) seven, fairly stringent qualifying conditions for a “profession.” Sometime after 1974, when the Certified Internal Auditor (CIA) exam was sponsored by The IIA, internal auditing had a sufficiently respectable profile and merited being called an established profession because: it had a body of specialized knowledge (common body of knowledge approved in 1972), a formal educational process (a minimum prescribed course of formal education), standards governing admission as a full member of The IIA (prescribed course of study, passing CIA exam, professional experience requirements, and the *Standards*), a Code of Ethics (first approved in 1968), a recognized status indicated by a license or special designation (the CIA, or the MIIA⁷, recognized in several jurisdictions worldwide), a public interest in the work that the practitioners perform (perhaps more evident in the work performed by internal auditors in government, education, and nonprofit organizations rather than in the private sector), and a recognition by professionals of a social obligation (again, perhaps more evident in government, education, and nonprofit organizations).

For the internal audit function to raise its organizational stature, it was critical that it forge a strong relationship with “those charged with organizational governance,” and communicate directly to the audit committee. There is much evidence today that such a reporting relationship is being widely viewed as a best practice in the most progressive corporations committed to enhancing governance structure and processes. In an early but landmark study on corporate audit committees, Mautz & Neumann (1977) stated:

“For the most part the audit committee is viewed as a bridge between the board of directors and the auditors...To fulfill their responsibilities to shareholders and the public at large, audit committee members have had to become more interested in, and better informed on, auditing matters. Management also has become aware of the necessity of protecting itself through adequate attention to internal controls and effective audits. Consequently, it has become more responsive to auditor suggestions and audit committee requests for information.”

In similar vein, authors Brink & Witt (1982) noted that:

“In most situations the internal auditing group has moved to very high levels in all operational areas and has established itself as a valued and respected part of the top

management effort. To an increasing extent also the internal auditor is serving the board of directors — usually via the audit committee of that board.”

By 1993, the *Statement of Responsibilities of Internal Auditing* noted that “the scope of internal auditing encompasses the examination and evaluation of the adequacy and effectiveness of the organization’s system of internal control and the quality of performance in carrying out assigned responsibilities.” At this time, the scope of internal auditing included:

- “1. Reviewing the reliability and integrity of financial and operating information and the means used to identify, measure, classify, and report such information.
2. Reviewing the systems established to ensure compliance with those policies, plans, procedures, laws, and regulations that could have a significant impact on operations and reports, and determining whether the organization is in compliance.
3. Reviewing the means of safeguarding assets and, as appropriate, verifying the existence of such assets.
4. Appraising the economy and efficiency with which resources are employed.
5. Reviewing operations or programs to ascertain whether results are consistent with established objectives and goals and whether the operations or programs are being carried out as planned.”

It was well-understood by the early 1990s that internal auditors, depending on their particular organization’s needs and preferences, worked in several areas: compliance audits, audits of transaction cycles, investigating fraud and other irregularities, evaluating operational efficiency, analysis, measurement and reporting of operational and organization-wide risks, and other assurance and consulting activities. They performed a combination of *financial* reviews and audits, *operational* reviews and audits (sometimes called *program audits*, *performance audits*, *comprehensive audits*, and other similar descriptive labels), *management* audits, and *compliance* audits. In performing many of these activities, internal auditors made their approach risk-based and controls-focused. They also made extensive use of sophisticated technology applications in carrying out audits.

Gradually, internal auditors also began to exhibit “industry specialization” in terms of their domain knowledge of specific industries such as health care, oil, gas, and energy, defense, financial services, transportation, wholesale and retail, technology, telecommunications, media and entertainment, government and nonprofits, education, etc. Internal audit staff began to come from diverse backgrounds, including a large proportion of non-accounting majors, and women gained prominence within the profession. Internal auditors also became much more internationally oriented. In many cases, internal auditing became rather opportunistic, and internal auditors began to participate in and contribute to “special projects” on a

contingency basis, whether performing the role of risk officers, ethics officers, or compliance officers, as the situation demanded.

III. Contemporary Practice of Internal Auditing: Environmental Changes, New Roles and Responsibilities, New Definition

As the internal auditing profession became more firmly established, it responded quickly to new demands from significant regulatory and legislative mandates, as well as high-profile (inter)national reports: the passage of the Foreign Corrupt Practices Act (1977), particularly its emphasis on internal controls; the issuance of the Report of the National Commission on Fraudulent Financial Reporting (Treadway Commission Report, 1987); the Report of the Committee of Sponsoring Organizations (COSO) of the Treadway Commission (COSO, 1992); as well as the subsequent internal control frameworks presented by the Cadbury Committee Report (Cadbury Report, UK); the Criteria of Control Committee (CoCo Report, Canada); and the King Committee (King Report, South Africa); the amendments to the U.S. Federal Sentencing Guidelines (1995); recent changes in the New York Stock Exchange rules regarding the structure and composition of the Board of Directors of listed companies as well as the requirement for all publicly listed companies to have an internal audit function;⁸ the newly passed Sarbanes-Oxley Act of 2002; and ongoing calls for better organizational governance.

The business environment has experienced rapid and revolutionary change with far reaching consequences for organizations worldwide. Management responses to fierce global competition have included improved quality and risk management initiatives, reengineered structures and processes, and greater accountability — all needing more timely, reliable, and relevant information for decision-making. Organizations are also scrambling to put in place more effective governance structures and processes. In such a climate, it is no surprise that the internal audit function is viewed as the most qualified group of professionals to help with such experimentation with improved governance as well as support key governance processes: for monitoring the controls over, and for evaluating the operational effectiveness of, these management strategies and initiatives. However, to take advantage of this tremendous surge in the demand for their services, not only do internal auditors need a considerably enhanced repertoire of skills, attributes, and competencies but they also need to commensurately raise their organizational status and profile and align themselves appropriately within their respective organizations.

Ratliff & Reding (2002, p. xi) capture the expanded responsibilities and skill-set of the 21st century auditor as follows:

“Auditors of the 21st century must be prepared to ‘audit’ virtually everything — operations (including control systems), performance, information and information systems, legal compliance, financial statements, fraud, environmental reporting and performance, and quality. Auditors must master:

- Analytical and critical thinking skills.
- An efficient method to gain an adequate understanding of any auditee — individual, organization, or system.
- New concepts, principles, and techniques of internal control.
- An awareness and understanding of risk and opportunity related to both the auditee and the auditors.
- Development of general and specific audit objectives for any audit project.
- Selection, collection (using a broad array of audit procedures), evaluation, and documentation of audit evidence, including the use of statistical and non-statistical induction.
- Reporting audit results in a variety of formats to a variety of recipients.
- Audit follow-up.
- Professional ethics.
- Audit technology applicable across a variety of types of audit reports.

In addition, auditors must understand the concepts of auditor independence and objectivity as these concepts relate to different types of audits by different types of auditors. They must fully understand cost and materiality implications of risk, opportunity, and audit evidence.”

In similar vein, Moeller & Witt (1999, p. 14-15) list the following necessary personal attributes to be a successful internal auditor (in addition to technical and professional qualifications, this is a formidable list): (1) basic fairness and integrity; (2) dedication to the organization’s interests; (3) reasonable humility; (4) professional poise; (5) empathy; (6) role consistency; (7) curiosity; (8) critical attitude; (9) alertness; (10) persistence; (11) energy; (12) self-confidence; (13) courage; and (14) ability to make sound judgments.

The new roles, responsibilities, and attributes of the contemporary internal auditor envisaged by these authors constitute a tall order. It is to understand these elements better that The IIA Research Foundation sponsored the wide-ranging, three-volume *Competency Framework for Internal Auditing (CFIA)* study (Birkett et al., 1999). This globally conducted study clearly pointed out the need for internal auditors to possess a radically expanded set of skills

and competencies to cope with massive change and complexity in both private and public sector operations. A Delphi study, conducted as part of the comprehensive *CFIA* study, concluded that in the context of burgeoning change and uncertainty, the internal audit function adds value by providing assurances to those charged with organizational governance that organizational risk exposures are well understood, being monitored, and under control. A further conclusion of the Delphi study was that internal audit activities in the future would most likely be conducted through flexible, and many times self-directed, work teams featuring varying mixes of internal auditing specialists, application specialists, and general organizational personnel.

Another seminal IIA Research Foundation study by Rittenberg & Covalleski (1997) described and assessed the impact of the “outsourcing phenomenon” and made the following summary points for the rapidly evolving internal auditing profession: (1) There is a monumental change underway in the way in which auditing is being done; (2) Internal auditing work can be done by non-employees; (3) Audit independence is a problem, but outsourcing is not the “make or break” issue; (4) Existing internal auditing departments should act as if they were going to be “market tested”; and (5) The IIA should rethink its process for establishing standards and policies.

In the late 1990s, partly as a result of insightful, IIA-sponsored research studies as well as numerous forward-thinking articles in The IIA’s flagship journal, *Internal Auditor*, The IIA recognized a fundamental need to formally reassess and evaluate the profession’s governing principles, orientation, and knowledge base of competencies and skills. There was a fourfold purpose behind The IIA’s strategic document “A Vision for the Future,” viz., enhance the economic value of internal auditing; ensure consistently high quality internal auditing; strengthen the professional standing of internal auditing; and achieve broad market awareness of internal auditing (GTF Report, 1999). The Guidance Task Force carried out a comprehensive review of the existing professional standards, the code of ethics, and even the definition of internal auditing. They concluded that the old terminology failed to “adequately reflect the evolution of practice [or] effectively promote the internal audit profession in the competitive marketplace” (Krogstad, Ridley & Rittenberg, 1999). The new Professional Practices Framework embraced the following purposes (GTF Report, 1999):

- “1. Provide a flexible framework for supporting and promoting a broad range of value-adding internal auditing activities.
2. Delineate basic principles that represent the practice of internal auditing as it should be throughout the world.
3. Foster improved organizational processes and operations.
4. Require a quality assurance mechanism to ensure compliance with the *Standards*.

5. Achieve “preferred provider” recognition in the marketplace based on worldwide reputation for high quality internal auditing services.”

The new definition of internal auditing is designed to accommodate the profession’s expanding role and responsibilities:

“Internal auditing is an independent, objective assurance and consulting activity designed to add value and improve an organization’s operations. It helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes.”

Chapman & Anderson (2002) explain that this new definition of internal auditing presents a new image of the profession in six significant ways:

1. As **an objective activity**, not necessarily established within the organization, the revised definition permits internal auditing services to be provided by “outsiders,” in effect acknowledging that quality internal audit services can now be obtained through outsourcing.
2. By emphasizing that the scope of internal auditing encompasses **assurance and consulting** activities, the new definition projects internal auditing as proactive and customer-focused, and concerned with key issues in control, risk management, and governance.
3. By explicitly stating that internal auditing is **designed to add value and improve an organization’s operations**, the new definition underscores the significant contribution that internal auditing makes for any organization.
4. By **considering the whole organization**, the new definition perceives internal auditing’s mandate much more broadly, charging it with helping the organization accomplish overall objectives.
5. The new definition assumes that controls only exist to help the organization manage its risk and promote effective governance. Such a perspective considerably **broadens the horizons** of internal auditing and expands its working domain to include risk management, control, and governance processes.
6. The new definition accepts that the internal auditing profession’s legacy, consisting of its **unique franchise** in being a standards-based profession, may well be its most

enduring and valuable asset. Rigorous standards provide the basis for crafting a documented, disciplined, and systematic process that assures quality performance on internal audit engagements.

The new definition of internal auditing is enshrined in a comprehensive *Professional Practices Framework* (IIA, 2002a), a structural blueprint of how the body of knowledge in internal auditing and the applicable guidance fits together. The *Professional Practices Framework* consists of three categories of guidance: *Standards and Ethics*⁹ (mandatory guidance), *Practice Advisories* (strongly recommended), and *Development & Practice Aids* (helpful reference materials developed or endorsed by The IIA). The Framework organizes the full range of guidance in a manner that is readily accessible and timely for internal audit practitioners. It is expected to be responsive to the needs of internal audit practitioners and grow more robust in the coming years. The IIA *Standards* and elements of the *Professional Practices Framework* are available on the IIA's Web site at <www.theiia.org>

It is evident from the preceding historical review and summary that internal auditing has evolved remarkably over the last 60 years and has gained an increasingly important role within organizations, whether in industry, government, or the nonprofit sector. Alongside this development, the internal auditing function today accepts a broader responsibility toward the organization itself and its stakeholders. By offering expanded assurance and consulting services to the organization, i.e., in particular to the audit committee of the board of directors as well as to executive management, the internal audit function effectively contributes to improved organizational governance. Furthermore, information assured by internal auditors enhances both internal and external decision-making, thereby improving the deployment, and the effective and efficient use of scarce organizational and economic resources.

Based on an understanding of how contemporary organizations function and the relevant influences, the internal audit function and its activities will be discussed using myriad perspectives in the following chapters of the *Research Opportunities in Internal Auditing* monograph. These perspectives will provide a richer and fuller understanding of the context of the internal auditing function and its activities in modern organizations and thus help generate the types of basic and applied research questions that are likely to be of serious and enduring interest to academics and practitioners.

IV. Prospects for the Internal Auditing Profession

Contemporary organizations are increasingly information-dependent and knowledge-intensive, and engage in extremely specialized and sophisticated operations across industries and sectors globally. The development of new organizational forms in the information age,

with the forging of strategic alliances and the emergence of virtual organizations, has dramatically altered the purpose and functioning of organizations as well as the attendant needs for exercising control.¹⁰ The controls landscape within organizations today is quite different from those existing in the industrial-era traditional organizations for most of the 20th century. In this radically changed business environment, the internal audit function has become a major support function for management, the audit committee, the board of directors, the external auditors, as well as key stakeholders. Properly conceived and implemented, the internal audit function can play a critical role in promoting and supporting effective organizational governance.

As multinational enterprises have recognized an increasing array of risks facing the organization, it is no surprise that the demand for risk management professionals has risen dramatically (cf. Bernstein, 1996). Any disciplined approach to growth and value creation assumes that the organization is managing all manner of significant and likely risks effectively. Risk can be considered both at the macro or portfolio level (enterprise-wide risk management) as well as the micro or departmental level. Risk management is frequently an area in which internal audit can contribute greatly by furnishing analyses and providing wise counsel to top management and the board of directors. The internal audit function also performs micro-level risk assessment for its own purposes to identify those areas which demand the greatest efforts on the part of the internal audit function and for achieving appropriate audit coverage of the audit universe over defined periods of time (Ramamoorti & Traver, 1998). Internal auditors can play a significant “partnering” role with management in establishing and monitoring business processes for the assessment, measurement, and reporting of risks in general and in implementing enterprise risk management initiatives. Modern approaches to risk-based internal auditing allow for the assessment of risks and linking them to business objectives systematically (McNamee & Selim, 1998; Walker, Shenkir, & Barton, 2002; DeLoach, 2000). Indeed, the internal audit function can facilitate the processes by which business units “can develop high quality risk assessments,” and this can in turn be very useful to the internal audit function in planning its own work, primarily by enhancing the quality of decision-relevant information and minimizing duplication of effort (Walker et al., 2002).

One of the key premises today in any organization is that the presence of a strong internal audit function can go a long way in supporting and promoting effective organizational governance. Much of organizational governance has to do with effective monitoring and oversight of risk management, and internal auditors, if perceived as “risk management experts,” can expect to play an immensely significant and high-profile role within organizations in the coming decades. With the recent New York Stock Exchange requirement for listed companies to have an internal audit function, the profile of the internal audit function has

been raised considerably. By being given a seat at the table where high-level discussions of organizational governance occur, the horizons for the profession have been considerably expanded and its opportunities to add value have grown exponentially. However, the challenge remains for internal audit professionals to develop a keen understanding of the value proposition they offer and manage their perception and image both within and without organizations. Once the internal audit function gains the trust and confidence of those charged with governance, it can proceed to deliver outstanding performance and value using the combined wealth of knowledge and experience possessed by its personnel in control best practices, risk monitoring and management, and governance structures and processes. Specifically, with all of the Big Four professional services firms demonstrating a strong interest in developing their internal audit co-sourcing practices, the internal audit profession is poised for significant international impact. Such globalization of internal auditing activities and the attendant recognition of the value added by the internal audit function are indeed welcome trends.

In conclusion, the 21st century presents much promise and unprecedented growth opportunities for the internal auditing profession. However, developments in practice must be carefully studied by interested academics so that a body of knowledge is systematically built up and transmitted to future generations of internal auditing professionals. The extant body of knowledge should not only be critiqued and constantly refined to reflect the current state of the art, but should also encourage and stimulate, through research, leading edge thinking that so often produces innovations in practice. We believe that this report constitutes an excellent source to start the journey that will yield important insights into internal auditing research, practice, and education.

V. Summary of Research Issues

The historical overview of internal auditing and the contemporary expectations from, and roles and responsibilities of, the internal audit function within organizations suggests a variety of research questions for exploration and investigation.

Appearing in the Appendix is a series of potential research questions organized under captions such as: historical/archival/policy-oriented research, contemporary practice: state of the art of internal auditing, theory/common body of knowledge/education, prospects, and miscellaneous. We hope that interested academics would benefit from careful study of the suggested research questions and the lines of inquiry that they open up for future research investigation. (Note: The list of research questions in the Appendix is intended to be merely illustrative and is by no means exhaustive).

VI. Appendix I: Chapter Research Questions

Historical/Archival/Policy-Oriented Research

- How can we develop a simultaneous and integrated understanding of the global historical development of the internal audit profession? (i.e., this might require a comparative Geographic Time Tables of History approach)
- How has the evolution and development of internal auditing differed across regions of the world? What has been the most common triggering event? (e.g., massive fraud and business scandals followed by legislation supporting internal auditing)
- Would comparative historical research, for instance, on the public policy implications of prohibiting the joint supply of external and internal auditing by the same public accounting firm yield useful lessons?
- Why does the status of the internal audit function frequently seem to be a direct consequence of organizational leadership (C-suite executives) attitudes toward and expectations from internal audit? Would historical case studies of the long-standing internal audit functions in companies like J.C. Penney and Ford Motor Company shed light on this?
- Historically, why have developments in internal auditing typically lagged developments in external auditing? (e.g., because internal auditing has not been yoked with organizational governance in the past? Not seen directly to contribute to the public interest? Not mandated or legislated?) In this era of investor capitalism, is this going to change with the suddenly heightened profile of the internal auditing profession? Does the chief audit executive, in his or her new role, need directors & officers (D & O) liability insurance coverage?
- How can we assess the impact of economic vs. cultural variables on the evolution of the internal auditing profession?
- To what extent are internal auditor attitudes and posturing reminiscent of “patterns of behavior” (cultural process variations) versus “patterns for behavior” (variations in cultural ends or ideals) in organizations?

Contemporary Practice: Internal Auditing, State of the Art

- What are some common features of internal audit methodologies, approaches, and tools used by world-class organizations? Can we distill best practices from such “in search of excellence” studies?
- What impact is industry specialization having on internal audit professionals and on the internal audit function? What about the impact of technology and globalization?
- Why have internal auditors become so “opportunistic” in taking on a series of special projects on a contingency basis?
- How valuable is it to perform *ex ante* as well as *ex post* “event studies” of the promulgation of IIA standards? Have the *Standards* been effective in influencing practice? Do they serve as measures of the quality of performance of internal audit engagements?
- How good is the alignment between organizational goals and the internal audit function’s objectives, especially when internal auditors also assume the role of change agents?

Theory/Common Body of Knowledge/Education

- What are the fundamental postulates of internal auditing? What are the epistemological foundations of internal auditing, including relevant concepts and constructs, i.e., ways of knowing, quality and quantity of evidence, risk metrics, problems of fact and problems of value, justification, independence and objectivity, process and methodology, etc.? How and in what respects has internal auditing diverged from external auditing over the years? What is the “Philosophy of Internal Auditing”? (cf. Mautz & Sharaf, 1961, a theoretical approach)
- Do we need a follow up to the *Competency Framework for Internal Auditing (CFIA)* study every five years or so? Should we regard internal auditing as an expanding profession and take appropriate steps to examine its structure, scope, and content on a global basis and with sufficient frequency to keep the common body of knowledge current and relevant?

- How should internal auditing, a pragmatic field like surgery, be taught at the university level? How do we instill a “lifelong learning” orientation in those who wish to become internal auditing practitioners?
- What does the exercise of professional judgment mean in the context of internal auditing? How do we design mechanisms that effectively capture the experience and expertise of seasoned internal audit professionals and help with expert-novice knowledge transfer?

Prospects

- How could we try to chart the future of internal auditing? To what extent would studying disparate trends in organizational governance, technology, globalization, business complexity, demographic trends, education, etc. help?
- What might we find from a systematic Porter-type “Five Forces Analysis” for internal auditing to trace the development, current state, and future preparedness of the internal auditing profession?

Miscellaneous

- How useful is it to look at internal auditing theory using a “systems perspective”? Can organizational studies that adopt a holistic, integrated view and consider internal auditing in the context of the entire organization provide useful insights?
- Does the fact that the CIA is a global designation instill pride and *esprit de corps* in members? Does the fact that they belong to a global profession motivate members to hold themselves out accordingly and exhibit greater professionalism?

Footnotes

¹The inaugural New York City meeting location was no doubt because of the city's flourishing commercial activity and significance, but also because two of the earliest doctoral dissertations on the then fledgling subject of internal auditing were written by distinguished academics, both trained at Columbia University, New York City. These two pioneers of internal auditing — Dr. C. Aubrey Smith, later affiliated with the University of Texas at Austin, and Dr. Victor Z. Brink, later affiliated with Ford Motor Company and Columbia University — went on to write influential books on the subject, *Internal Audit Control* (Smith, 1933) and *Internal Auditing* (Brink, 1941).

²Interestingly, “Internal Auditing: A Profession for the 21st Century” was the 1996-97 theme chosen by then IIA Chairman of the Board Anthony J. Ridley to describe his vision for the profession during his year at the helm.

³In the United States, by the mid-19th century, internal auditors were actively assisting external auditors in investigating internal frauds at railroad companies in New York and New Haven (Previts & Merino, 1998).

⁴However, this transition has frequently not occurred in many organizations; the primary stumbling block is best captured by the phrase: “the issue of serving two masters.” On the one hand, internal auditors are typically employed by the organization (management) and need the support and cooperation of executive management to perform their duties effectively; on the other hand, when internal auditors are asked by the organization's audit committee of the board of directors to critique management performance, they must answer fearlessly recognizing their ultimate allegiance to those charged with organizational governance, not management. This unhappy situation of reporting to two masters creates much friction and tension for internal auditors. Indeed, if delicate issues are not managed tactfully, the ensuing breakdown in communications and cooperation can lead to a compromise of the internal audit function's independence and objectivity and/or a diminished organizational status for the internal audit function.

⁵In 1964, Bradford Cadmus published his seminal *Operational Auditing Handbook*. Earlier in 1947, he had been appointed The IIA's first paid managing director (Flesher, 1996).

⁶Lawrence Sawyer is also well-known for having written the celebrated book, *The Practice of Modern Internal Auditing*, now carrying the eponymous title, *Sawyer's Internal Auditing* (Sawyer & Dittenhofer, 1996, 4th Ed.). Larry Sawyer passed away in September 2002, just as this chapter was being finalized.

⁷MIIA = Member of the Institute of Internal Auditors, is a professional designation still used in the UK.

⁸The NYSE requirement for all publicly listed companies to have an internal audit function is a watershed event in the continued evolution of internal auditing in the United States. Such a mandate reinforces the credibility and legitimacy of the internal audit function for large, well-managed companies.

⁹Mandatory guidance consists of core materials: the Code of Ethics and *Standards for the Professional Practice of Internal Auditing (Standards)*. The purpose of The Institute's Code of Ethics is to promote an ethical culture in the profession of internal auditing. The *Standards* are the criteria by which the operations of an internal audit department or function are evaluated or measured. They are intended to represent the practice of internal auditing as it should be. Three sets of *Standards* have been issued: Attribute, Performance, and Implementation Standards. The Attribute Standards address the attributes of the organizations and individuals performing internal audit services. The Performance Standards describe the nature of internal audit services and provide quality criteria against which the performance of these services can be measured. The Attribute and Performance Standards apply to all internal audit services. The Implementation Standards expand upon the Attribute and Performance Standards, providing guidance applicable in specific types of engagements. These standards ultimately may deal with industry-specific, regional, or specialty types of audit services (IIA, 2002a, 2002b).

¹⁰One indicator of the sophistication and complexity of internal audit activities is the number of specialty certifications sponsored by The IIA, beyond the generic Certified Internal Auditor (CIA) designation: Certificate in Control Self-Assessment (CCSA), Certified Government Auditing Professional (CGAP), and more recently, Certified Financial Services Auditor (CFSA).

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CHAPTER 3
THE INTERNAL AUDIT FUNCTION:
AN INTEGRAL PART OF
ORGANIZATIONAL GOVERNANCE

T. Flemming Ruud

Disclosure

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The Professional Practices Framework for Internal Auditing (PPF) was designed by The IIA Board of Directors' Guidance Task Force to appropriately organize the full range of existing and developing practice guidance for the profession. Based on the definition of internal auditing, the PPF comprises *Ethics* and *Standards*, *Practice Advisories*, and *Development and Practice Aids*, and paves the way to world-class internal auditing.

This guidance fits into the Framework under the heading *Development and Practice Aids*.

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I. Introduction

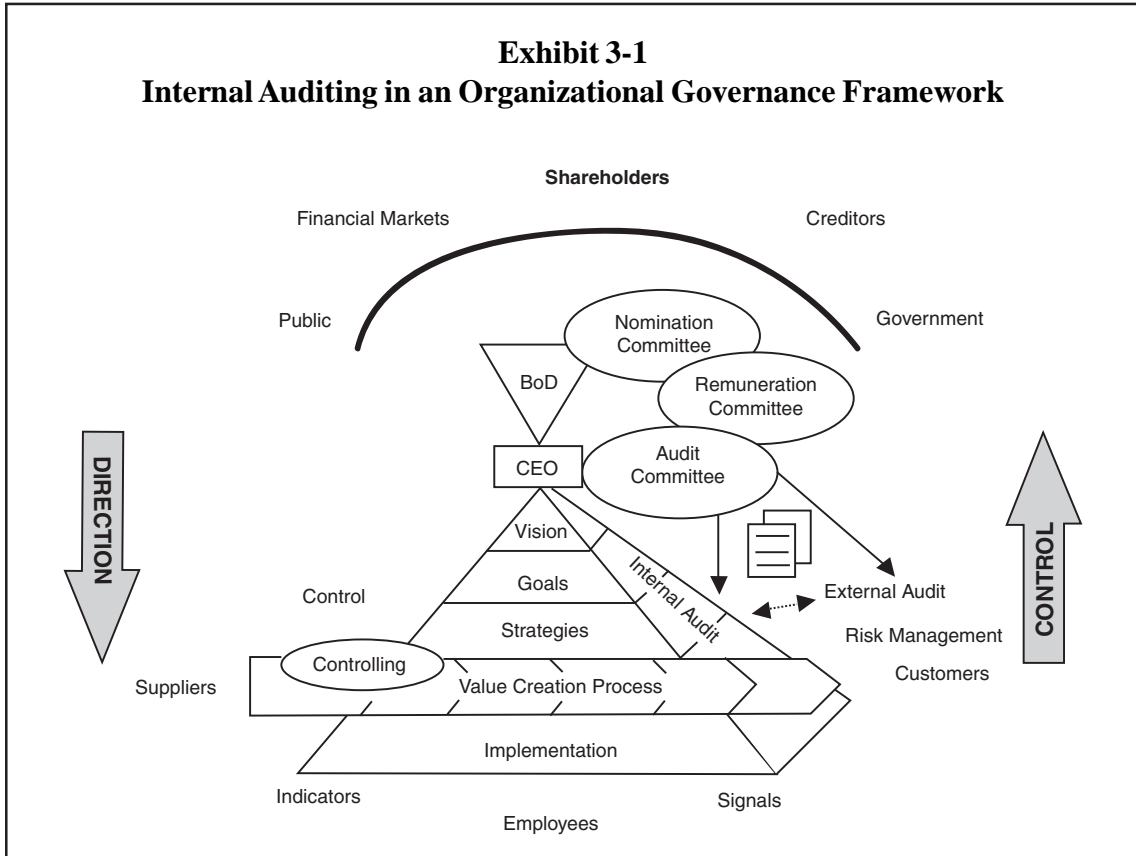
Chapter 1 provides considerable discussion on the evolution of the internal auditing profession over the last 60 years. To better understand and position internal audit in the context of contemporary global organizations, a conceptual framework containing several organizational governance issues is introduced in this chapter. Furthermore, this conceptual framework serves as a road map to key topics presented in the remainder of the monograph. Relevant authoritative standards from the newly issued Professional Practices Framework are cited to support, clarify, or expand upon this new role for internal audit.

II. The Core of the Conceptual Framework

An early governance study, the Cadbury Report (1992), defined governance as the “system by which companies are directed and controlled.” Similarly, discussed in the ROIA chapter by Hermanson and Rittenberg, other definitions of governance have emphasized the structure through which objectives are set, and how these are achieved and monitored. As Exhibit 3-1 shows, based on the strategic direction formulated by the top management and the board of directors, the organization develops specific objectives and goals attempting to turn the broad direction into operating, process-oriented, value-creating measures. To ensure these transformation processes, a thorough understanding of the risk threatening the whole organization or elements thereof is needed. Further, different control measures with indicators and signals are installed to measure specific performance, indicate necessary correction, and provide feedback to the operating management as well as to the top management and the board in aggregated form. The controller reports on process performance, the external auditors examine the financial accounting, and the audit committee engages in assuring the provision and reporting of internal and external information. Finally, the organization furnishes its shareholders and stakeholders with financial and operational information for continued decision-making.

Within this direction and control loop, the internal audit function takes on important roles of organizational governance, integrates several other governance and control aspects, and stands out as *the* most important, single mechanism for ensuring adequate and effective organizational governance.

The rest of the chapter describes these relationships in more detail. Any of the indicated relationships can be subject for in-depth studies and a number of research questions are provided to exemplify relevant research areas.



(Source: Ruud & Bodenmann, 2001, p. 522)

Understanding the Organization and its Objectives

Based on the strategic direction of an organization — defined in a *vision* and a *mission statement*, management develops and implements agreed-upon, realistic, and attainable business strategies and performance goals. Strategies indicate how an organization intends to achieve its objectives, while goals translate objectives to a measurable and achievable level. Many factors influence the operation of an organization and, consequently, determine which objectives the organization can reasonably seek to accomplish. Factors such as the type of operations, the organizational size and structure (e.g., centralized versus decentralized organization structure), or the capital base and structure, including compensation schemes (e.g., total share capital and debt employed, privately held versus public company, stock-

based compensation and incentives) all influence the organizational objectives and capabilities.

An in-depth understanding of an organization's objectives- and goals-hierarchy is a prerequisite for every successful internal audit function. The alignment of the internal audit function's objectives with the organization's goals is also explicitly recognized in *Standard 2010*, these factors strongly influencing the nature, scope, and purpose of the internal audit function.

“The chief audit executive should establish risk-based plans to determine the priorities of the internal audit activity, **consistent with the organization's goals.**” (emphasis added)

This top-down organizational objective hierarchy is illustrated graphically in Exhibit 3-1. It indicates how an organization — at best in congruence with the expectations of its stakeholders — chooses its desired strategic directions, how these objectives and goals are turned into operating measures, and how they become important parts of organizational governance. Decisions as to changing the organizational structures and operations as well as developments in management and organizational practices influence the organizational governance. Understanding these organizational relationships thus also forms the basis for structuring an effective internal audit function.

Developments in Management and Organizational Philosophy and Practices

Many recent, and ongoing, developments in management and organizational philosophy and practices have important implications for today's contemporary internal audit function.

Web of Relationships. Advances in global communications technology have transformed today's multinational companies into virtual communication networks. Organizations today are largely networked, extended enterprises that look “boundaryless,” prevailing business models in B2B and B2C commerce feature supply chain management (SCM), customer relationship management (CRM) initiatives, and a host of arrangements of strategic alliances, outsourcing arrangements, co-branding and cross-branding efforts, as well as other affiliations. This has also been remarked by Kiernan (1996, p. 6). “The organizational architecture of German industrial giant Daimler-Benz is becoming increasingly typical: ‘the company’ now includes not only its permanent in-house employees, but also strategic alliances (IBM, Mitsubishi), joint development and production initiatives (Thomson and Fiat), and cross-stakeholdings (Deutsche Bank, Saab, Banque Nationale de Paris). It is increasingly difficult to tell where companies begin and end, and there's less and less point in trying to do so.”

Indeed, organizations seem involved in an intricate web of relationships — they are consequently accountable to an ever-expanding stakeholder constituency, that is, they owe responsibility to numerous parties or groups affected directly or indirectly by the organization’s actions and decisions.

Outsourcing Non-Core Functions. Organizations focusing on what they deem to be their core competencies tend to exhibit a strong preference for outsourcing of non-core business functions (Rittenberg & Covaleski, 1997, p. 1) In such contexts, the internal audit function is less concerned with assuring the steps of the (internal) business processes, but instead devotes more attention and resources to ensuring that the negotiated outsourcing contracts are yielding the expected level of service quality, are being met timely, and are cost efficient. This is exemplified by the new *Standard 2110* and *2120* stating that compliance include those of laws, regulations, and contracts.

Soft Controls. An emphasis, in many organizations, on “softer” organizational values, ethics, and culture changes the control form as well as structure (COSO, 1992). The relevant question in this context is: “How should internal auditors audit business processes and aspects where the controls have shifted and compliance of guidelines and policies can no longer be audited in a traditional way?” Control risk self-assessment is one method for providing assurance by putting more emphasis on self-evaluation on the part of managers and employees as process-owners.

Reengineering. Organization-wide reengineering, involving “a fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical contemporary measures of performance such as cost, quality of service, and speed,” is becoming commonplace (Gupta, 2001). These management-driven business process redesigns and enhancements have had significant implications for the internal audit function, which was charged with monitoring the change management efforts and providing feedback as to whether they were successful.

Role of the Internal Audit Function. In today’s business environment, the internal audit function has become a major support function for management, the audit committee, the board of directors, the external auditors, and other key stakeholders. When properly designed and implemented, the internal audit function can play a key role in promoting and supporting effective organizational governance. This is depicted in Exhibit 3-1 by the overarching “umbrella” where some of the stakeholders are mentioned. *Standard 2130* defines governance processes as “the procedures utilized by the representatives of the organization’s stakeholders (e.g., shareholders, etc.) to provide oversight of risk and control processes administered by management.” The internal audit function certainly fits within this definition.

A Process-Oriented View of Value Creation and Risk Management

A key element of the new definition of internal audit is the focus “designed to add value and improve an organization’s operations” (IIA, 2002). Given today’s complexity in an organization’s business activities, as well as of its business environment, the management of isolated business activities and the negligence of the relationships between them have not proven successful. Rather, a process-oriented management approach that integrates the whole “value chain” (Porter, 1985) — or the “value network” or “value shop” (Stabell/Fjeldstad, 2000) — is necessary to ensure an organization’s viability and prosperity. One of the main business principles in this approach is the enhancement of customer satisfaction for both internal and external customers. This is depicted in Exhibit 3-1 by the horizontal value-creating process, ultimately linking the customers’ desires with the transforming processes and vendors through procurement.

In order to provide most value-adding services, the internal auditing function needs to assume a process-oriented audit approach as well (Roth, 2002). Indeed, given the organization-wide in-depth knowledge internal auditors accumulate throughout their careers, they are particularly familiar with an organization’s value creation and are therefore ideal consultants for the improvement of an organization’s processes. The improvement of internal processes is likely to have a positive effect on suppliers and customers (e.g., cost savings, reduced production times, improved quality of products), thus the internal audit function is also able to add value to external parties. Assessing information all along the value creation process, the internal audit function contributes to more reliable and relevant information than if isolated information is evaluated. This also allows an improved relationship and cooperation between the internal and external auditors and leads to more effective organizational governance (see also Felix, Gramling, & Maletta, 1998).

A disciplined approach to value creation requires an organization to manage all significant and likely risks effectively. Risk can be considered both at the macro or portfolio level (enterprise-wide risk management) as well as the micro or departmental level. In Exhibit 3-1, risk management is indicated on the right side of the pyramid, and can be performed internally or externally. Important to realize, however, is that the ultimate responsibility for conducting risk management remains with top management and the board.

Just as crucial as it is to understand an organization’s goals, is it crucial for an internal audit function to understand the risks that either threaten the achievement of objectives and goals (*Standard 2110*) or that fail to identify and explore new opportunities for the organization. Internal auditing is therefore expected to apply an integrated, process-oriented approach to the evaluation of risks in order to evaluate both upside and downside risks. Apart from

understanding risks, the internal audit function needs to assess risk management processes in order to determine whether structure, functioning, and control processes are appropriate to manage the identified risk factors. Assurance Standard 2010.A1 states:

“The internal audit activity’s plan of engagements should be based on a risk assessment, undertaken at least annually. The input of senior management and the board should be considered in this process.”

Over the last few years, The IIA Research Foundation has released several excellent publications on the topic of risk and risk management, viz., McNamee & Selim (1998), the Tillinghast-Towers Perrin Study on Enterprise Risk Management (2001), and more recently the study by Walker et al. (2002). The internal audit function’s role in risk management is explored further in the ROIA chapter by Kinney.

III. Organizational Governance

Organizational governance can be understood in the context of the needs of and the relationship to the stakeholders of an organization. The IIA *Standards* define governance processes as “the procedures utilized by the representatives of the organization’s stakeholders (e.g., shareholders, etc.) to provide oversight of risk and control processes administered by management.”

Organizational governance has changed fundamentally over the last decade due to numerous large business failures, some of them in the wake of massive management fraud. Huge financial losses have led to an increasing focus and demands on organizational structure from investors, creditors, and other constituencies. In this context, it has become important to inquire as to how organizations assure that planned activities and guidelines are in fact being implemented and are functioning as intended. Internal audit functions can take on important roles in providing such assurance, thus promoting organizational governance.

Internal Stakeholders

The board of directors, top management, operational management, and employees as main internal stakeholders have direct responsibility for the organizational activities.

Shareholders and investors charge **the board** and **top management** with the responsibility of managing their invested funds. Direction and control are top management’s main instruments to assume this responsibility (see Exhibit 3-1). **Middle management’s**

responsibilities are primarily defined at the operational level. Middle management redefines strategies and objectives defined by top management as organizational goals, which are further broken down into key performance indicators and signal systems. These key performance indicators and signal systems can be analyzed in order to ensure the proper functioning of systems and processes, and to eventually answer the question as to whether the organization functions as intended. **Employees** perform operational activities. However, given trends such as a higher knowledge level of employees, empowerment, enhanced automation or in-line controls, management can increasingly delegate control activities.

The **board of directors**, as a special group of internal stakeholders, is mainly charged with the definition of the overall strategic direction and with the supervision of operational activities. The board of directors should be adequately diversified and have a sufficient number of qualified members, without being too large for efficient decision-making. Two types of board systems are prevalent — the two-tier or dualistic system with a “management” and a “supervisory” board (e.g., found in continental Europe and particularly in France, Germany) and the one-tier or monistic system with one “board of directors” found, for example, in the UK and U.S. Several countries feature board systems with elements of both the monistic and the dualistic type.

The board of directors is commonly divided into subcommittees in order to take advantage of the board members’ special knowledge, experience, and expertise. Typical committees are the **nomination** and the **remuneration** (or compensation) as well as the **audit committee**, the latter being most important in the context of internal auditing.

The audit committee functions as the coordinator between the external, financial audit, and the internal audit function as well as other assurance functions (e.g., risk management, compliance, code of conduct, legal matters, etc.). Typically, the audit committee is mandated with the financial monitoring (Blue Ribbon Committee, 1999). An interesting feature in some organizations is that the audit committee has a broader responsibility and oversees both operational and financial aspects of governance. An excellent example of this is the Swiss pharmaceutical company, Hoffmann La Roche, where the audit committee coordinates both financial and operational issues, while a separate “financial committee” considers the financial aspects.

To be able to assume its role as representative of shareholders’ interests, the board of directors is supported by different organizational functions, e.g., risk management, organizational compliance, and organizational controlling and organizational security that help ensure the existence of adequate and effective governance. Risk management has gained widespread acceptance as mentioned earlier. Typically, the function is positioned high in the organization,

often reporting directly to the CEO. Offering an enterprise-wide, comprehensive risk analysis, the internal audit function can base its own planning on risk management's results. The organizational compliance function is typically located at the board secretary level and focuses on compliance of legal and regulatory issues. In addition, depending on the structuring of the organization, functions such as organizational controlling and organizational security as well as other organizational bodies such as information security can offer assurance to internal and external stakeholders. A close relationship of the described functions with the internal audit function can lead to better cooperation between assurance functions and offer a higher level of organizational assurance. For the purpose of this report, these activities are not being further considered here; however, several research issues as to the relationship of the differing functions can be identified and explored. The conceptual framework in Exhibit 3-1 illustrates these potential relationships.

Depending on the organizational structure, the audit committee organizes and coordinates further governance promoting activities such as the risk management, corporate compliance, corporate controlling, and corporate security. A key issue here is that the internal audit function can take on varying assurance assignments to improve organizational governance.

External Stakeholders

An organization faces different groups of external stakeholders, i.e., shareholders, financial markets, customers, suppliers, regulators, government, neighbors, and the public at large. These stakeholders are not directly involved in the business activities, but have an interest in the activities of the organization (ref. *Standard 2130*). Further, they influence the organization through their decision-making (for example, shareholders influence the market valuation of companies, or financial creditors offer or restrict credit).

Offering assurance — as to the functioning of the organization — to these external decision-makers is an issue of utmost importance as organizations struggle to make themselves attractive to investors, creditors, suppliers, and customers. As explained, the internal audit function can contribute effectively to improve governance in several aspects.

To **investors**, the issue is to ensure capital availability and liquidity as well as keeping the cost of capital within reasonable ranges. By offering assurance on information and on operational processes, the internal audit function can contribute in analyzing the needs for capital and liquidity, reduce the probability of a capital and liquidity squeeze, as well as provide creditors and investors with assured information as to the standing of the organization. It is to be expected that the cost of capital should be lower in a company where a high level of assurance is offered as compared to a company with higher uncertainty and risk.

To **suppliers**, the main focus is to stay as an attractive partner, which can negotiate favorable conditions.

To **customers**, a primary interest lies in the delivery of products and services that satisfy their needs in a timely and economic way.

Further external stakeholders such as the **public at large** and the **government** have other interests. Through development of regulations, supervision of their compliance as well as the judicial processes against potential infringement, the government plays several roles of significance to organizations. The pressure from the national and local government is not to be underestimated and, consequently, this importance should be understood.

Different stakeholders may have very different needs for information and assurance. Furthermore, between the organization and the stakeholders, there are different potential conflicts of interest. For example, the organization may not want to supply certain types of information to a financial creditor because of a potentially higher interest rate. Or similarly, investors may want more and assured information to make a “buy-or-sell” decision.

Many of these potential situations can be explained through the concept of an “asymmetric information” situation where the manager has better in-depth knowledge and understanding than the organizational body supervising him or her. In order to alleviate this “information bottleneck” situation where some people are better informed than others, internal or external assurers such as the internal audit function can offer assurance to the decision makers that the information is factual and correct.

The asymmetric information issue can also be exemplified between a one-tier (monistic) and a two-tier (dualistic) board of directors system. In situations where the chairman of the board also functions as CEO, the person has superior knowledge, which mostly is efficient for the daily business and decision-making. However, the supervisory role of the board is lacking and becomes more of a challenge.

The internal audit function can take on a more extensive role in systems with adequate and effective organizational governance. A key issue in this context is how the role and function of the internal audit function differ under the two systems of boards. This could be studied empirically across organizations as well as across nations with varying governance systems.

IV. Role of the Internal Audit Function in Promoting Effective Governance

In order to analyze what the internal audit function can offer, it is important to understand the needs and expectations of the internal and external decision makers toward the internal audit function. Also, different industries have varying needs for assurance services. For example, banks and insurance companies typically define the objective of the internal audit as one with primary focus on assuring the money flow, i.e., monitoring and supervising processes in order to prevent monetary losses and safeguarding assets. On the other hand, the manufacturing industry and the transportation sector has for some time used a more operationally oriented audit approach, as reengineering and process improvement within the areas of supply chain management, customer relationship management, production, marketing, accounting etc., were undertaken. A third group would be the public sector, which focuses on serving the public at large and the individual citizen. Obviously, these different sectors have different desires for assurance and thus needs for different internal audit services. Depending on the needs and desires of the organization and users, the internal audit function can take on different roles.

Interesting in this perspective is to consider recent organizational trends and how organizations function in a modern management and organizational perspective. These issues were discussed in the *Competency Framework for Internal Auditing (CFIA)* (Birkett et al., 1999), as well as in the preceding analysis (cf., e.g., Porter, COSO).

The Formulation of the Role of the Internal Audit Function in the Audit Charter

Understanding the role and the functioning of the internal audit function begins with an in-depth understanding of the organizational objectives- and goals-hierarchy. *Standard 2010* states:

“The chief audit executive should establish risk-based plans to determine the priorities of the internal audit activity, consistent with the organization’s goals.”

The agreed role of the internal audit function needs to be linked closely to what the organization is doing and must be formulated in the audit charter (Purpose, Authority, and Responsibility). *Standard 1000*, Purpose, Authority, and Responsibility, states:

- *The purpose, authority, and responsibility of the internal audit activity should be formally defined in a charter, consistent with the Standards, and approved by the board.*

- *1000.A1 - The nature of assurance services provided to the organization should be defined in the audit charter. If assurances are to be provided to parties outside the organization, the nature of these assurances should also be defined in the charter.*
- *1000.C1 - The nature of consulting services should be defined in the audit charter.*

The internal audit function is the single most important internal assurance provider. It is essential for top management and the board to employ the available assurance functions in an optimal fashion, i.e., to evaluate how and what each assurance function contributes to the overall desired assurance level. In addition to the responsibility of the chief audit executive, this is to be decided upon by the relevant organizational level such as top management or the board. *Standard 2050* says:

“The chief audit executive should share information and coordinate activities with other internal and external providers of relevant assurance and consulting services to ensure proper coverage and minimize duplication of efforts.”

This standard relates to the external audit function, but internal assurance providing functions such as risk management and corporate compliance can similarly contribute effectively to total assurance coverage.

Positioning of the Internal Audit Function

Among other functions within an organization, the position of the internal audit function is fairly unique in terms of: (1) its advantageous position *within* the organization, (2) the wide range of functional areas that it examines as well as the different types of audits capable of being performed, and (3) the multidisciplinary backgrounds of individual auditors comprising the internal audit team (Rittenberg & Schwieger, 1997). These desirable features continue to exist in most in-house functions and co-sourcing arrangements, but are somewhat diminished in the context of full outsourcing of internal audit services. Nevertheless, in every situation, the organizational status, positioning, and independence of the internal audit function is of paramount consideration.

Most importantly, a complete and sound understanding of the governance structure of the organization is a precondition for establishing an effective and independent¹ internal audit function Mautz (1964, p. 471) presciently observed: “The matter of independence is always a difficult one for an internal auditing function. It will of necessity report to someone within the company organization and therefore lacks the final degree of independence possessed

by public accountants. On the other hand, if it reports to an appropriate level of authority within the enterprise, it can well have sufficient independence to make itself effective.” Accordingly, in order to ensure that the internal audit function can operate effectively and achieve the desired results, it is tantamount that the mandate is given from an adequately high organizational level. An optimal structure is achieved when the chief audit executive (CAE) reports directly to the audit committee (rather than the chief financial officer), alternatively, directly with the board of directors. This structure is indicated in Exhibit 3-1 with a clear reporting line to the audit committee. Another solution is the direct relationship with the chief executive officer; however, such a positioning makes the effective supervision of the CEO difficult and may increase the information asymmetry problem.

Internal auditors should refrain from assessing specific operations, and to avoid conflicts of interest, they have to be objective and independent (*Standard 1100*). The independence of internal auditors is a professional obligation to fulfill “an objective, unbiased, unrestricted opinion, and to report matters as they are rather than as some executive would like to see them.” (Sawyer, 1996, p. 63). In this connection, Rittenberg & Schwieger (1997, p. 758) usefully observe that the internal auditor frequently confronts “difficult practical and ethical situations when there may be a conflict between loyalty to the company and the need to dissociate themselves from undesirable or even potentially illegal activities.” A fuller examination of the concepts of independence and objectivity in the context of internal audit functioning appears in the ROIA chapter by Mutchler.

Internal Audit Activities: Assurance and Consulting Services

The internal audit function offers two main services: assurance and consulting services. **Assurance services** are defined as “providing an independent assessment on risk management, control, and governance processes of the organization. Examples may include financial, performance, compliance, system security, due diligence engagements” (*Standards, Glossary*). To provide the described assurance services internal auditors need to be independent and objective, implying integrity, competence, due care, and ethical behavior.

Assurance services differ from **consulting services** in that the latter are “Advisory and related client service activities, the nature and scope of which are agreed upon with the client and which are intended to add value and improve an organization’s operations.” Examples include counsel, advice, facilitation, process design, and training” (*Standards, Glossary*). These aspects are addressed in the ROIA chapter by Anderson.

The nature of work of the internal audit function (according to *Standard 2100*):

“...is to evaluate and improve the effectiveness of the following three processes:

- *Risk management processes — identification and evaluation of potential risks that might affect the achievement of objectives of an organization and determination of adequate corrective actions. A link can here be made to critical success factors.*
- *Control processes — policies, procedures, and activities which ensure that risks are kept within the limits defined by management in the risk management process.*
- *Governance processes — procedures which allow stakeholders to evaluate risk and control processes defined by management.”*

The internal audit function can thus contribute both by evaluating the systems’ functioning and reliability (assurance services) and supporting the design of these systems by providing specific recommendations (consulting services). The services actually provided by the internal audit function depend on the positioning in the organization as well as on its intended function.

Internal audit can contribute to effective governance in several ways. First, it can assist in the identification of risk factors, the analysis of the consequences, as well as in assisting management in the prioritization of risk management and control systems. Internal audit can add assurance that the risk management processes in fact are functioning as intended. Through consulting services, the internal audit function can furthermore assist management and the board by improving risk management and control processes.

The internal audit function can then assume an important role as an in-house advisory function that offers analyses and assurance to the board as to the functioning of the risk management and internal control systems.

Relationship with the Independent Public Accountant

An important cooperation of assuring information lies in the coordination of the external and internal audit function (see Exhibit 3-1 for the direct relationship). Although the external auditors mostly carry out the audit of the financial statements, internal auditors can contribute greatly through business, process, and activity knowledge as well as profound understanding of the risks facing the organization. In this way, the external auditors can conduct their audit more efficiently and provide a higher assurance level.

Felix et al. (1998) characterize the general current status of the relationship between the internal and external auditors as follows:

- “1. Internal and external auditors independently develop and then share information on risk analysis.
2. Some attempts are made to coordinate audit plans.
3. When joint auditing is performed, the external auditor typically determines when and where such joint activities take place.”

However these authors point out that the quality of communications between the two groups can be enhanced and that internal audit participation and assistance at the consolidated financial statement level can further be optimized. This coordination of different audit functions (internal and external audit) is known as total audit coverage.² Clearly, this is one area where existing governance structures and processes can be reviewed and further optimized for the benefit of all parties concerned.

Knowledge, Skills, and Competencies Needed for Fulfilling the Internal Audit Function’s Role

Derived from the defined and agreed role, the internal audit function needs to analyze how it can fulfil its role with its competency and capacity. Due personnel planning represents the basis for an optimal staffing of the internal audit function. Apart from external recruitment, internal auditors are commonly recruited from within the organization. The organization can encourage employment in the internal audit function by using it as a “stepping stone.” That is, serving in the internal audit function can, for example, be a requisite for further advancement and as grooming for leadership positions within the organization. Some of the personnel issues for the internal audit function, including hiring the best recruits from outside or from within the organization, on-the-job training and professional development, mentoring, and other matters regarding the management of the internal audit function, are covered in the ROIA chapter by Prawitt.

An important question as to the role and status of the internal audit function is who provides what activities (internal audit’s nature of work — risk management, control, and governance) and the type of service (assurance or consulting services). Even more often the internal audit function draws capacity and competency through in-sourcing or co-sourcing. Potential providers here are the large accounting firms, consultancies, business service providers, and others. The issue is then how the organization ensures that it achieves sufficient assurance from internal and external assurance providers. If it turns out to be insufficient resources in terms of capacity and/or competency for the internal audit function, necessary skills through in-sourcing and/or co-sourcing can be obtained.

A related topic as to who is providing the internal audit services is the cost of the internal audit function, especially in the case of employing external service providers. Commonly, the internal audit function is regarded as a fixed cost pertaining to a separate function within an organization. With the introduction of new and more flexible organizational forms, and by contracting with external firms for in-sourcing, co-sourcing, or outsourcing, the costs of the internal audit function can be classified, at least partly, as a variable cost. It would be an interesting research project to investigate why some organizations regard the costs of the internal audit function as fixed, while others classify them as variable.

In terms of questions regarding capacity and/or competency, a current research topic is to consider the developments in the market for externally provided internal audit services. Regulators in countries such as Brazil and the U.S., citing the dangers of compromising auditor independence, have introduced rules prohibiting public accounting firms from offering internal audit services to audit clients.

Systematic Process of Internal Auditing

The characterization of internal auditors as professionals makes the adoption of a disciplined, systematic approach to conducting an audit a natural expectation from internal audit practitioners. Similarly, internal auditors are assumed to have adequate training and experience to exercise sound professional judgment when the circumstances require so. Further, a unique advantage of the internal auditing profession is that it is standards-based. The newly issued *Professional Practices Framework*³ only underscores The IIA's commitment to raise the profile of internal auditors, provide authoritative guidance, and generate confidence in the quality of their work within organizations. As such, it is extremely important that internal auditors base their work on documented, rigorous approaches and methodologies that can be defended if their work is ever questioned by any of the organization's key stakeholders. Many of these issues are discussed in the ROIA chapter by Lemon and Tatum.

The central importance of experience and the interaction of judgment with professional expertise are captured in several works devoted to understanding, evaluating, and improving "professional judgment." Indeed the exercise of judgment is not only essential to the practice of disciplines such as law, medicine, and accounting, but is also what distinguishes these domains as professions (Boritz, Gaber, & Lemon, 1987, cited in Gibbins & Mason, 1988). In an environment calling for greater accountability for professional judgments, the basis for the exercise of professional judgment is increasingly coming under scrutiny (Ramamoorti, 1995).

In addition to carrying out research with the aim of understanding, evaluating, and improving professional judgment, it is also important to consider the use of decision aids and technology-based tools for conducting more efficient and effective audits. This may include the use of statistical sampling applications, ACL, IDEA, Microsoft Excel, CAATs, and other information systems auditing tools, as well as regression analysis and other statistical techniques. The IIA's *Systems Auditability and Control* (SAC) product from the 1970s has been updated to accommodate the needs of e-commerce, and the eSAC guidance is now available online. More recently, innovations such as Benford's Law for identifying errors and discrepancies, as well as the use of artificial intelligence techniques such as neural networks (see Ramamoorti & Traver, 1998), have made their debut. It should be noted that data warehousing procedures go hand-in-hand with data mining applications, and internal auditors with an eye toward the future need to gain familiarity with this burgeoning but highly relevant literature in computer science, database management and applications, expert systems, and artificial intelligence.

The professional internal auditing environment continues to be dynamic, uncertain, and complex, and has continually dictated that internal auditors gain industry specialization. Internal auditors are specializing by gaining industry-specific experience and/or by qualifying for specialty designations in governmental auditing, control self-assessment, or financial services.⁴ This trend toward more proliferation of certifications and designations is likely to continue. What is required today is a combination of both experience and industry expertise, and internal audit practitioners are struggling to cope with the resulting information overload. In this connection, The IIA's *Professional Practices Framework* supplemented by the periodic issuance of Practice Advisories and other Guidance are helpful to the chief audit executive and the practitioner. This is an area in which academics interested in the internal auditing profession can play pioneering roles in advancing the goals of education, research, and practice.

V. Summary

This chapter of the ROIA monograph has attempted to demonstrate the important relationships between the internal audit function and other organizational units. The exhibit introduced initially in the chapter graphically shows these relationships and issues presented throughout the chapter. In each and every one of these relationships, interesting research topics can be identified and explored. In the Appendix to this chapter, several relevant research questions are outlined.

VI. Appendix I: Chapter Research Questions

Organizational Governance

- How does the structure of the board of directors influence the organizational governance and the role of the internal audit function? What are the differences between the unitary vs. the dualistic board system and its effect on the internal audit function and organizational governance?
- What national differences are there to the structure and role of boards of directors?
- What is the role of the internal audit function in establishing and ensuring effective organizational governance?
- How can the internal audit function best contribute to reduce information asymmetries between internal and external stakeholders?
- How will recent developments in organizational governance influence the role of the internal audit function? What will be the change in audits and focus?
- Which communication channels are the optimal ones to create between the board and the internal auditors? For example, how often and to what board members (audit committee) should the internal auditors report to ensure adequate and effective organizational governance?
- What is (are) the potential impact(s) of having the internal audit function report to different organizational levels (e.g., board of directors in general, audit committee, the CEO, the COO, the CFO)?
 1. In terms of the impact on the effectiveness of organizational governance.
 2. In terms of the impact on other organizational issues.
- For the outsourced internal audit function, does communication between the board and the internal auditors differ?

Internal Audit Function and Structure

- What are the current trends of the structure and content of internal audit charters? What changes were performed after the introductions of the new definition? How do these trends differ across countries?

- Have there been changes in independence/objectivity with the introduction of the new definition of internal audit? Is the discussion independence vs. objectivity changing the role of the internal audit function?
- What national differences are there to the structure and role of internal audit function?
- Are communication processes for internal audit functions performing consulting services different from those functions primarily offering assurance services?
- How is the coordination between the internal audit function and other assurance or “organizational governance” functions (e.g., risk management, organizational compliance, external auditing)? What is the best practice?

The Internal Audit Activity

- What are the consequences of changing the “scope of work” to the “nature of work” for internal auditors (from the 300 Standards to the 2100 Standards):
 1. How is the role of the internal audit function affected?
 2. How does this change the needs for changing competencies of the internal audit?
 3. Which consequences are to be identified for the audited organization?
- What is the level of assurance offered?
- How does the emphasis on “soft” factors (competency, trust, understanding the importance of culture, ethics, moral, etc., replacing detailed guidelines and regulations, teamwork and transparency) influence the internal audit activity? For example, one could assess the importance of change in management and organizations, or how empowered organizations function and what the effects on internal audit are. Further, in-depth understanding of the organizational goals and objectives and the value drivers replace formal communication.
 1. What are the effects of organizational changes on the structuring and assignments of the internal audit function?
 2. How do auditors have to base the audit in an empowered organization? How in case of a changing control environment?
 3. How do auditors have to audit the ethical climate and the “softer issues” of the organization (importance, methods, effects, and consequences)?
- Why do some organizations regard the costs of the internal audit function as fixed, while others classify them as variable?

- Why are there differences in the internal audit function across industries? A comparative study as to the differing roles of the internal audit function in industry sectors (for example, banking vs. industry or transportation sector).

Relationship between Internal Audit, External Audit, and Other External Services Providers

- What is the relationship between external and internal auditors and the audit committee?
- What is the consequence of recent developments as to the market for externally provided internal audit services, such as CPA firms having to stop offering internal audit services to external audit clients due to the independence?
- What is the nature of coordination between the internal audit function and other assurance or “organizational governance” functions (e.g., risk management, organizational compliance, external auditing)? What is the best practice?

Footnotes

¹The notion of independence as it is construed with respect to internal and external auditors is different. An external auditor must be independent, in fact and in appearance, in the eyes of those outside the organization that place reliance on the external auditor's opinion on the financial statements. An internal auditor, on the other hand, must be seen as independent and objective by those who rely on his or her work inside the organization, viz., management and the board of directors (Rittenberg & Schwieger, 1997).

²For further information about total audit coverage, see Felix et al., (1998).

³The recently issued title in the IIA Handbook Series, "*Implementing the Professional Practices Framework*" by Chapman & Anderson (2002), is an important resource for practitioners and educators.

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**CHAPTER 4
ASSURANCE AND
CONSULTING SERVICES**

Urton Anderson

Disclosure

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The Professional Practices Framework for Internal Auditing (PPF) was designed by The IIA Board of Directors' Guidance Task Force to appropriately organize the full range of existing and developing practice guidance for the profession. Based on the definition of internal auditing, the PPF comprises *Ethics* and *Standards*, *Practice Advisories*, and *Development and Practice Aids*, and paves the way to world-class internal auditing.

This guidance fits into the Framework under the heading *Development and Practice Aids*.

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I. Introduction

Internal auditing provides a variety of services to the organization. These services may range from conducting financial, performance, compliance, system security, and due diligence audits, to participating on committees to select new accounting software, to revising the organization's code of conduct, to teaching training courses in internal control to new managers. If one were to limit one's thinking about internal auditing to just the traditional auditing of internal controls, one would be missing a significant part of the work being performed by the internal audit function in many organizations. In this section we look at internal audit from a much broader perspective than that used in traditional audit research where auditing is treated primarily as a matter of attesting to management's assertions.

We begin with the question of how the internal audit function adds value to the organization. Next we describe the range of value-added internal audit services and examine the nature of assurance and consulting activities. Four specific issues in providing assurance services are then discussed:

- Levels of assurance
- The relation of evidence to type and level of assurance
- Providing assurance outside the organization
- The nature of assurance in fraud investigation

Consulting services also has a number of issues with which practice struggles. We will discuss four of particular concern:

- Blended engagements
- Balancing assurance and consulting
- Limits on the extent of consulting an internal audit function should undertake
- The risk and reward of providing consulting services

Throughout our examination of each of these topics, potential research questions will be identified. These questions are summarized in an appendix at the end of this chapter.

II. Adding Value

How does one determine if an activity adds value? To begin to answer that question one must first identify the activity's customer. As Exhibit 4-1 illustrates, in the case of internal auditing, the identification of a single or even a primary customer is not clear. Is it the CEO?

Throughout the 1970s and 1980s, writers such as Larry Sawyer (1973) took this position with their view of the internal audit function being “the eyes and ears of management.” Is it the audit committee? Those seeking to solve the problems of organizational governance would argue that internal audit should rather be “the eyes and ears of the audit committee.” Others argue that it is the auditee or operating management that is the customer and that the value the internal audit function adds is in its ability to improve the efficiency and effectiveness of operations. Such is the thinking of those who would evaluate the internal audit function on projected cost savings and improvements. Is it the external auditor? There were those companies in the late 1970s and early 1980s where the *raison d’être* of the internal audit function was to reduce the external audit fee. In fact, today most practicing internal auditors would acknowledge the demands from each of these customers and that somehow the internal audit function must balance its work to meet their needs.

Exhibit 4-1
Internal Audit Customers

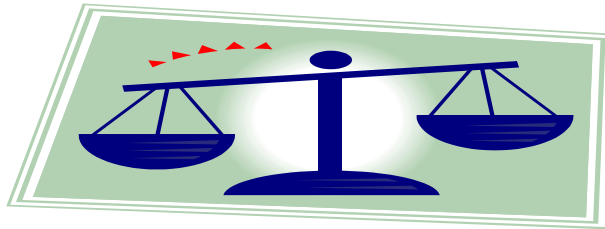


Not only does the internal audit function have a variety of customers, what adds value (the value proposition) for that customer will also vary. Appendix F of the report of The IIA's Guidance Task Force (IIA, 1999, 79-81) provides an initial analysis of the internal audit function's customers and the products these customers value. For example, operating line managers (often the auditee) are interested in the ways internal audit can improve the efficiency and effectiveness of their operations. The external auditor looks to internal audit as an additional internal control which, if operating effectively, can reduce the extent of the work the external auditor must perform to issue an opinion on the organization's financial statements. Suppliers and customers are looking to internal audit to provide assurance on the reliability and security of the information in the systems forming the interface between them and the organization. The line staff of auditees are looking for internal audit to bring them innovations and best practices from across the organization. These various value propositions not only vary but often can be in conflict in terms of allocation of audit resources and, in some cases, tasks.

The tension created from these various customers and their differing demands is best illustrated by considering the audit function's two extreme customers — operating managers and the audit committee. Operating managers are focused on how they can meet their operating objectives. For them the audit adds value by identifying opportunities for improving their operations by either increasing effectiveness or, more commonly, identifying potential cost savings and making operations more efficient. They focus on the recommendations made in the report or suggested during the audit. They are less concerned with the auditor's views or opinions on the adequacy of their internal controls other than the effect reporting such opinions has on their superior's evaluation. The audit committee (board of directors), on the other hand, has relatively little interest in recommendations to improve efficiency. They are concerned with the opinion of the auditor regarding whether internal controls are adequate, the data being provided by managers is reliable, laws and regulations are being followed, and assets are safeguarded. If we think in terms of the traditional scope of internal audit work as presented in The IIA's *Standards for the Professional Practice of Internal Auditing (Standards)*, we see in Exhibit 4-2 that the value comes from different "audit" objectives. In the current terminology of the "new" internal audit definition, this is a distinction between assurance services and consulting services.

Can these customer demands be met with a single product? Until the 1990s internal audit attempted to do so through the traditional operational audit. The assurance was provided in the "opinion" on the adequacy of internal controls or through the implied opinion that controls were adequate through the disclosure of any significant control issues. The consulting side was addressed through the recommendations targeted to the auditee. Attempting to serve both demands through a single product, however, has its limitations. The inherent tension

Exhibit 4-2
What the Customers Value by Scope of Work



Audit Committee/Board

- Safeguarding Assets
- Compliance with Laws and Regulations
- Reliability of Data

Value: Improve quality of Information

Operating Management

- Effectiveness and Efficiency of Operations

Value: Agent of change

between these two demands can be seen in the many variations found in audit practice. One underlying theme in the internal audit literature that reflects this tension is the issue of whether an internal audit report should have an overall audit opinion. There has been no requirement for one either in the prior version of the *Standards* or in the current version. Practice varies with strong advocates both for and against. Likewise, must an audit result in recommendations? The *Standards* do not require that it do so.

The literature has basically presented recommendations as a marketing tool for audit, a means for getting auditees to address control issues by presenting them with a practical option. With the pressure in the late 1980s and early 1990s for every part of the organization to demonstrate its ability to add value, the single product approach begins to be challenged. We saw many audit functions expanding “products” through activities such as control self-assessment, involvement in quality and re-engineering initiatives, and implementation of enterprise risk management systems. Currently, a growing number of audit functions are taking a multi-product approach. For example the audit function of FirstEnergy Corp. offers its customers 21 distinct services ranging from investigation into alleged fraud, to surveying customers to determine satisfaction, to facilitation of groups to arrive at process improvements as well as the traditional audit (Roth, 2002, pp.168-169).

Given the various different demands from different customers, how in a world of limited resources does the internal audit function balance the services provided to meet these various customers' needs? This is the fundamental question of internal audit management — one which current events have brought to the forefront of the profession. But before we can address the issue of balancing these various customer needs, we must first answer the question, “Is there an ultimate customer?” In other words, are all of internal audit's customers and their needs equally important? And, if not, who is the ultimate customer of internal audit?

Currently, there does not seem to be agreement on the answer to the questions of the ultimate customer in the profession and, in fact, it is a question rarely directly discussed or addressed. It is not a question practicing audit directors are comfortable talking about because of the delicate balance a director must maintain among these various groups. In the days of Sawyer things were simple — “audit was the eyes and ears of management” — and the term “management” meant the upper management of the organization, the people who hired auditors and determined if they got a raise. Life was simple for the audit director — keep the CEO (or CFO where often internal audit reported) happy and you were doing the job. In the words of the *Statement of Responsibilities of Internal Auditing*, “the objective of internal auditing is to assist all members of management in the effective discharge of their responsibility by furnishing them with analyses, appraisals, recommendations, and pertinent comments concerning the activities reviewed” (as found in Sawyer, 1973, p. 513).

While in many sectors and regions of the world this “eyes and ears of management” is still the predominate approach, attempts to solve organizational governance problems have shifted the internal audit to also become “the eyes and ears of the audit committee.” For example, the report from the Joint Committee on Corporate Governance (2001) in Canada envisions a strong role of the internal audit function in assisting the audit committee in fulfilling its role:

There are many operational aspects of the audit committee's relationship with the internal audit function that are important for the effective oversight of the internal control framework and culture. Where a corporation has an internal audit function, the audit committee should approve its mandate, be satisfied that it has adequate resources to perform its responsibilities, and ensure that the director of internal audit has direct and open communication with the committee....Where internal audit does not exist, the audit committee has an important oversight role that goes beyond the normal operational issues. (2001, p. 31)

A similar view is found in the United Kingdom:

Senior management and the board may desire objective assurance and advice on risk and control. An adequately resourced internal audit function (or its equivalent

where, for example, a third party is contracted to perform some or all of the work concerned) may provide such assurance and advice....In the absence of an internal audit function, management needs to apply other monitoring processes in order to assure itself and the board that the system of internal control is functioning as intended. In these circumstances, the board will need to assess whether such processes provide sufficient and objective assurance....The board of a company that does not have an internal audit function should assess the need for such a function annually having regard to the factors referred to in paragraphs 43 and 45 above. Where there is an internal audit function, the board should annually review its scope of work, authority and resources, again having regard to those factors....If the company does not have an internal audit function and the board has not reviewed the need for one, the Listing Rules require the board to disclose these facts. (Internal Control Working Party of the Institute of Chartered Accountants in England & Wales, 1999, paragraphs 43 to 47)

Even in the governmental sector the internal audit function (as distinct from the legislative and external audit functions) is being called upon to serve the audit committee, as well as management. The IFAC Public Sector Committee has explicitly stated that to be fully effective, the audit committee is independent of the organization's executive management. To achieve independence necessary for effectiveness one of the requirements is that:

The chief internal auditor and the external auditors bring all significant findings arising from audit activities to the attention of the audit committee, and if necessary, the governing body (IFAC, 2001, paragraph 7.254).

Further, in the light of the recent highly visible cases of corporate governance failure both in the United States and elsewhere, The Institute of Internal Auditors has recommended to the Congress of the United States that "All public companies should maintain an effective, full-time internal audit function that reports directly to the audit committee" (IIA, *Recommendations...*, 2002).

But can the internal audit function serve two masters? Can it provide the objective assurance required of the audit committee and senior management and provide the partnering with operating management necessary to bring about operational improvements? Is the delivery of assurance services compatible with delivery of consulting services? As the internal auditing profession entered the 21st century there seemed to be consensus that these two roles were compatible and that both masters could be served. However, the same failures in corporate governance that pushed The IIA to call for direct reporting to the audit committee has called into question this compatibility. An article on the front page of *The Wall Street Journal* dramatically illustrates the shift in thinking on the compatibility of assurance and consulting

(Dugan, Berman, and Barrionuevo, 2002). The article describes the transcription from a video prepared by Arthur Andersen to tout the integrated audit approach that had developed at Enron. As we see from some sample comments in Exhibit 4-3, what once was a positive statement has now become negative. Perhaps one of the most telling is the statement by Mr. Buy, Enron's chief risk officer, who said in a transcript that the energy company wouldn't have developed as rapidly without Andersen, partly because the firm helped deal with the Enron board:

"We move fast around here, things cook. I mean, it's a high-stress, high-pressure fast-moving place. ... You don't want anyone at [risk-control meetings] that's going to slow you down or bog you down or not be value added, so it's good to have the Arthur Andersen people who are, you know, I think they're smart, they're quick, they understand what we're doing ... " But Mr. Buy said some members of the Enron board's audit committee "don't know the details of [the] trading business, they don't know about value at risk The board is also relying equally as heavily on Andersen, who attends the same meetings and they have a presentation, I have a presentation. If we're adrift, one of those two groups has got to let them know."

While this was a case of external audit and consulting services, the potential parallel with assurance and consulting in internal audit certainly raises concern.

Exhibit 4-3

Source: Front page of the April 15, 2002, issue of *The Wall Street Journal*

In Their Own Words

Excerpts from transcripts of Arthur Andersen videotapes on the accounting firm's relationship with Enron.

"Over time we and Arthur Andersen will probably mesh our systems and processes even more so that they are more seamless between the two organizations."

— **Jeffrey Skilling**, then Enron president

"Arthur Andersen's penetration or involvement in the company is probably different than anything I've experienced in that they are kind of everywhere and in everything."

— **Richard Buy**, then Enron's chief risk officer

"Out here we don't call audit audit."

— **Patricia Grutzmacher**, Andersen auditor

Clearly one of the major challenges facing the internal auditing profession will be positioning of itself in terms of providing assurance and consulting services. What will be the effects on the mix of services if The IIA-recommended shift to direct reporting to the audit committee takes place? Will such a shift hinder internal audit's ability to add value to the organization? Will it increase tension between auditor and auditee? Will it have a chilling effect on the internal audit function's relationship with senior management? To be able to approach issues such as these, a clear understanding of the essential nature of assurance and consulting services is needed.

Research Questions

- What are the various value chains through which internal audit adds value to its customers?
- How do characteristics of the organization such as industry, size, regulatory environment, and organizational structure change the potential to add value through these various value chains?
- What are the mechanisms used by internal audit management to balance the demands of the various internal audit customers?
- Is the multi-product approach more effective in meeting customer demands than the traditional single product (the traditional internal audit) approach?
- What organizational factors (if any) must be in place for the multi-product approach to be successful?
- Is the traditional internal audit an effective way of meeting the demands of operational managers (the demand for consulting services)?
- Is there a primary (ultimate) internal audit customer? If so, who is it?
- Does this ultimate customer depend on any organizational or environmental characteristics?
- What will be the effects on the mix of services if The IIA-recommended shift to direct reporting to the audit committee takes place?

- Will a shift to direct reporting hinder internal audit's ability to add value to the organization? Will a shift to direct reporting increase tension between auditor and auditee?
- Will a shift to direct reporting have a chilling effect on the internal audit function's relationship with senior management?

III. The Assurance/Consulting Continuum

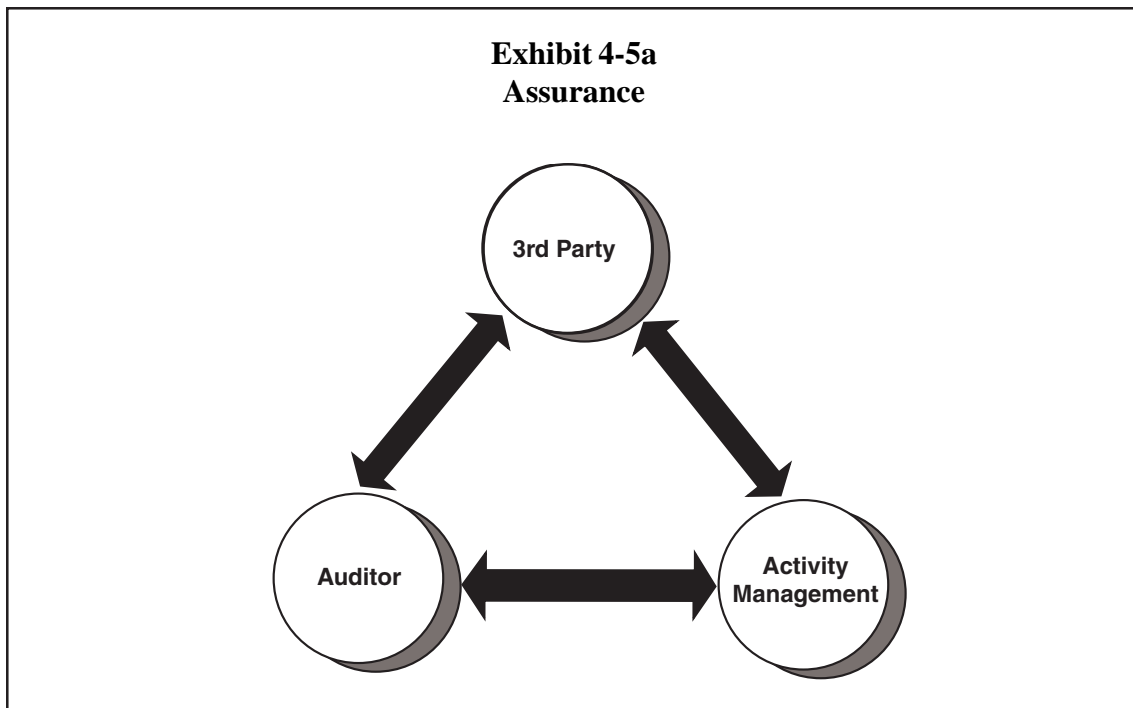
Internal auditing is defined as an independent, objective assurance and consulting activity designed to add value and improve an organization's operations. Assurance activities certainly include the traditional internal audit, but also include other services. The glossary to the *Standards* defines an assurance engagement as an objective examination of evidence for the purpose of providing an independent assessment on risk management, control, or governance processes for the organization. Examples of the types of engagements that would be considered assurance engagements include financial, performance, compliance, system security, and due diligence audits.

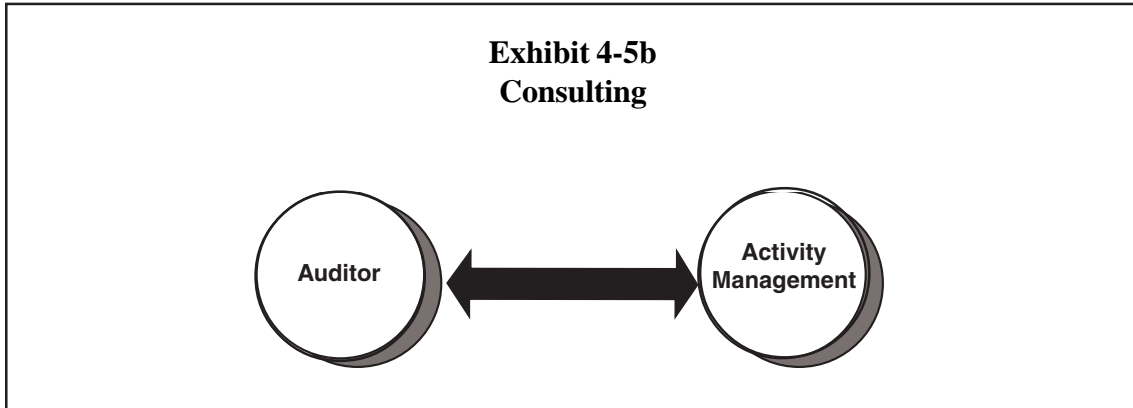
The glossary defines consulting activities as advisory and related client service activities, the nature and scope of which are agreed upon with the client and which are intended to add value and improve an organization's operations. Consulting activities, though new to the definition and the Professional Standards, include activities that have long been performed as part of the internal audit function's work. This includes such activities as conducting internal control training, providing advice to management about the control concerns in new systems, drafting policies, and participating in quality teams.

Exhibit 4-4 shows a continuum of six basic types of internal audit services: financial auditing, performance auditing, quick response auditing, assessment services, facilitation services, and remediation services. The taxonomy comes from a model developed by the Government Audit Training Institute, the Graduate School, the United States Department of Agriculture, and underlies the assurance and consulting implementation standards of the current IIA *Standards*. The three audit services are assurance activities and the assessment, facilitation, and remediation the consulting activities. The extreme left of the continuum represents traditional financial attestation audit and, as one moves to the right, goes from traditional attestation (pure assurance) to operational auditing to fraud investigation, then into consulting with activities such as control self-assessment to the extreme of remediation services where the internal audit function is doing the actual work of client management rather than providing assurance.

correspondence between those assertions and established criteria and communicating the results to interested users. (American Accounting Association, 1973)

While this definition proved not to be sufficiently broad to extend to assurance services, it did capture several essential elements of the assurance activities. First, assurance engagements involve a systematic process of objectively obtaining and evaluating evidence. Second, these engagements require the existence of established criteria. Third, the engagement involves the communication of the results to interested users, some third party apart from the provider of the service or those involved in the process or area under review. It is this third party that is the customer in the audit and assurance process, and who determines the value of the activity. As a result, the interest of this third party must be protected throughout the engagement in order for the engagement to be effective, which significantly complicates the process of providing auditing and assurance services. Making matters even more difficult, the third party is usually not present or involved in establishing the engagement contract, regardless of whether the contract is explicit or implicit. Further, in the case of the traditional external audit, the third parties are for the most part unknowable other than by general type (for example, creditors, potential investors, shareholders, etc.).





Auditing and assurance standards are the primary mechanisms that have developed to protect the interests of the third party and that allow for efficient engagement contracting for assurance services. One example of how such protection is embodied in the standards are requirements that the auditor be free to set the scope of work rather than have the scope of work set by activity management of the area under review. Other examples would be rules on auditor objectivity and independence and requirements regarding form and content of communications. The extent of these would also seem to vary with the distance of the third party from the contract and whether or not specific third parties are known. Thus, external audit appears to require more extensive standards than internal audit. And external assurance engagements with known third parties appear to need less extensive standards than traditional external audit.

Consulting in contrast involves only two parties, the auditor (service provider) and the activity management. The activity management — the client — is the customer. The value added of the consulting engagement is determined by its value to activity management. There is no absent third party requiring protection, so there is no need for standards stating that the scope of work must be up to the auditor; in consulting services if the client (activity management) does not see the potential value of doing further work in an area the client is free to have the auditor stop. Nor do we have need in standards for specific reporting requirements such as the requirement that there must be a written report or for requirements for follow-up on engagement results. There may be written reports and auditors may do follow-up, but these are determined in the specific engagement contract and at the request, or at least with the agreement, of the client.

Two other distinctions are sometimes made between assurance and consulting activities. First, assurance engagements require an opinion as to the result whereas consulting

engagements produce recommendations if indeed there is any formal reporting involved. Second, assurance engagements are mandatory in the sense that the audit function cannot arbitrarily decide not to undertake an assurance engagement once it has been identified as an area of need. The function may do so if higher risk areas are identified or the preliminary assessment of risk that led to the area being selected proves to be mistaken, but not because the audit staff doesn't want to go to Lubbock or you don't have staff with the needed skills. Consulting engagements, on the other hand, may be declined by the audit function without need of elaborate justification. The absence of staff skills or scheduling issues provides sufficient cause. Whether these two distinctions have significant implications has yet to be formally analyzed in the literature.

Research Questions

- If one views the primary role of professional standards for auditing and assurance as protection of the interest of third parties, what is the minimal requirement for a set of standards and how do they vary with characteristics of the assurance service and of the third party?
- Must an assurance engagement result in the communication of an opinion?
- Are there any non-discretionary consulting engagements?

IV. Assurance Services

The assurance/consulting continuum has three basic types of assurance services. The first is "financial auditing" and includes engagements that follow the traditional attestation model. This would include situations where the internal audit function audited a division's quarterly results or a claim by management that a product line was profitable. Also under this type of service would be compliance attestations such as audits of travel expenditures or conflict of interest policies. This category would also include work done in conjunction with the organization's external auditors for the audit of the financial statements. Models for these types of engagements have been well developed in the extensive literature on external financial statement auditing. However, in internal auditing, particularly in the government sector, there is an increased emphasis on the attest type of engagement with regard to the auditing of broader performance measures. The movement of a significant number of corporations to balance scorecard systems may provide more internal audit functions with similar engagement opportunities. But an analysis of who are the customers of these performance measure audits and how value is added is lacking in the literature, as is empirical study on the extent of such practices.

“Performance auditing” or operational auditing represents the traditional internal audit. Selection of areas for these types of engagements in most current internal audit functions are made through a process of risk assessment with the objective of minimizing the risk with constrained audit resources. While the formal model for this service has not been extensively developed in the academic literature, there exists a large practitioner literature describing how to conduct such engagements. As mentioned earlier, in the past the internal audit function has tried to satisfy all its customers with this performance/operational approach. For the audit committee and senior management, this type of engagement provided assurance on internal controls and in many organizations gave an opinion on their adequacy or even assessed a grade. For the auditee (operating manager) it provided a list of recommendations about how weakness could be corrected or improvements in efficiency made. With a shift to a multiple service approach will there be a change in the performance audit in terms of attempting to address the concerns of operating managers? Proponents of control self-assessment certainly argue that there are more effective ways of achieving process improvements than the traditional performance audit. Would this type of assurance service change if the focus were only to provide assurance and not to improve processes? By such a shift, could significant efficiencies be gained in providing assurance on the adequacy of internal controls?

“Quick response auditing” includes services that typically arise by special request of upper management. In this respect they are like consulting, but are not classed as such because the management requesting them is typically a third party looking for assurance. The dominant engagements of this type are fraud investigations, but also include valuation and due diligence engagements.

Research Questions

- Does auditing performance measures add value? Who are the customers for such attestations? Is the increased adoption of the balanced scorecard approach in the private sector creating a demand for such services?
- Is the traditional performance audit obsolete? Can assurance on internal controls be more effectively and efficiently obtained without the traditional focus on process improvement as well?
- Is fraud investigation an assurance service? Who are the customers and how is value added?

- Are separate implementation standards needed for fraud investigation? Would the adoption of such standards have significant ramifications for challenges in court to investigation results?
- How can the internal audit function demonstrate that the assurance engagements it has performed have added value to the organization?

V. Consulting Services

“Assessment services” are engagements in which the auditor examines or evaluates a past, present, or future aspect of operations and renders information to assist management in making decisions. These engagements need to be as timely as possible and usually don’t include specific recommendations for management. Examples of this type of consulting engagements would be the assessment of controls in a system design, such as assessing the adequacy of internal control in a proposed accounts payable system. Other examples might be: (1) the study and evaluation of the proposed restructure of the organization to reflect the most practical, economical, and logical alignment, or (2) estimating the savings from outsourcing process.

“Facilitation services” are engagements in which the auditor assists management in examining organizational performance for the purpose of promoting change. The auditor does not judge organizational performance in this role. Rather, the auditor guides management in identifying organizational strengths and opportunities for improvement. Such engagements include control self-assessment, benchmarking, business process reengineering support, assistance in developing performance measurement, and strategic planning support.

The final type of consulting service on the assurance/consulting continuum is “remediation services.” This represents the most extreme and threatening type of consulting activity in terms of incompatibility with providing assurance, and yet has always been present to a degree in all internal audit functions. These are engagements in which the auditor assumes a direct role designed to prevent or remediate known or suspected problems on behalf of the client. Such an engagement might be as innocuous as developing and delivering a training seminar on internal controls. Certainly such training is a common and valuable service provided by many internal audit functions for their organizations, yet it is clearly a management function. Or an engagement could involve the drafting of policies for cash handling or writing the organization’s code of conduct. Such activities begin to make auditors nervous about their ability to objectively audit these areas at a later date, but what auditor has not seen the words written in an audit recommendation to illustrate what sort of policy the

auditee might implement a year later word for word in the auditee's policy manual? Finally, in the extreme, such engagements include the augmenting of operating personnel, in which the auditor actually performs operating functions for a period of time or even on a permanent basis.

Research Question

- How do internal audit functions determine which consulting engagements to accept?

VI. Issues in Providing Assurance Services

In providing assurance services there are numerous issues with which practitioners are currently struggling. Some have been issues for many years; others have recently come to the forefront because of changes that advances in technology have brought to business practices. These issues can be categorized into four areas:

- Level of assurance
- The relation of evidence to type and level of assurance
- Providing assurance outside the organization
- The nature of assurance in fraud investigation

Each of these areas offers researchers a challenging set of problems that can be productively approached with a variety of methodologies.

Level of Assurance

Does each assurance engagement that internal audit conducts provide the same level of assurance? In one sense the *Standards* require that sufficient evidence be collected to support the reported conclusions, but do these conclusions vary in the amount of reliance the user should place in the auditor's work? In the traditional financial attestation audit there is presumed to be, at least in theory, some same minimal level of assurance across audits. It is not clear this same presumption holds for internal audit assurance engagements. Further, financial attestation standards in many parts of the world explicitly recognize the levels of assurance based on the engagement design. For example, in U.S. auditing standards one can have positive assurance, negative or limited assurance, or no assurance based on the engagement design (audit/examination, review, compilation). The U.S. governmental auditing standards have proposed to adopt a similar approach (GAO, 2002c, Chapter 6). Would such distinctions be useful in internal audit? What type of criteria would be necessary to distinguish the levels?

At a more basic level, this raises the fundamental issue of effectiveness of the communication regarding assurance in internal audit reporting. Are the users of the reports attributing the amount of assurance the internal auditor intended to communicate? Do all users interpret this the same way or does it vary as one moves from immediate operations to executive management to the board? Also, as there is little standardization in reporting format, how do factors such as whether or not an explicit opinion is given, the detail of the reporting, the extent that audit procedures are described, the quantification of the impact of findings, etc., influence the degree of assurance the user ascribes to the report?

The Relation of Evidence to Type and Level of Assurance

Related to the questions of whether internal audit does, or should, communicate degrees of assurance, is the relation of evidence to the type and level of assurance. For instance, do auditors need more evidence if they are providing assurance to the audit committee than to the local operating managers? Do the objectives of the assurance require different amounts of evidence? For example, does assurance on compliance with laws and regulations require more evidence than assurance on the operating efficiency of a production process? Can there even be assurance without detailed testing? What is the impact on evidence requirements of whether the engagement is expected to provide assurance for external reporting (such as CEO certification under Sarbanes-Oxley), assurance to the auditors attesting to the financial statements, or assurance to regulatory auditors?

A significant difficulty in addressing such issues is the lack of theoretic development relating evidence to assurance. While in U.S. financial auditing standards, SAS No. 47 provides a basic framework for the relation of evidence to level of assurance for attestation of financial statement assertions, it has been more difficult to apply this framework beyond the financial audit. SAS No. 68 attempted to extend the framework to compliance attestation, but this risk framework seemed to have lost favor and was not carried through explicitly to SAS No. 74, which subsequently replaced SAS No. 68, nor into the attestation standards other than the occasional footnote (although SSAE No. 10 does make reference to “maintaining attestation risk at an appropriately low level” and provides some definitions as these concepts apply to compliance attestation engagements). In internal audit there has been even less focus paid to the evidence issue so that a systematic look at this issue is long overdue. The current increased demand for overall assurance on the adequacy of internal control and the absence of fraud as a result of the CEO and CFO certification requirements will further increase the need for research on this issue.

Providing Assurance Outside the Organization

A trend of organizations to form strategic alliances and advancements in technology has led to a significant increase in the interconnectivity of organizations. As these trends continue and e-commerce becomes a fundamental way in which organizations operate, there will be increasing demands for assurances of the quality of computer systems, information security, controls over privacy of data, and quality assurance practices. Increasingly, internal audit functions are being approached to provide assurances to outside organizations on these matters. For example, in the case of alliances, if the security of an organization's information processing is dependent on the security of a potential partner's information processing, both organizations will demand assurance that the prospective partner's information system is secure. If the prospective partners have competent and objective internal audit functions that have audited against a set of criteria acceptable to both parties, the organizations may not feel the need to spend the money required to get external assurance but seek to share the respective internal audit function's work. Or in a case posed to the Internal Auditing Standards Board the question was raised as to whether an internal audit department could provide the equivalent of a SAS 70 review on a bank's computer operations when the bank provides processing services for other banks. Here the other banks requested the control evaluation from the internal audit department because they perceived the report would be more useful than a report from an external auditor.

Such situations give rise to the need for research on a number of issues. Under what conditions can an internal audit function provide assurance to parties outside the organization? Governmental auditing reports routinely provide assurance to outside parties such as the general public or other governmental entities. However, in the private sector this is relatively rare, the exception being audits of joint ventures, the use of reports by external and regulatory auditors, and some rare cases of certification (e.g., attestation to the United States Environmental Protection Agency (EPA) in its oxygenated gasoline program Title 40 CFR Part 80.125). What factors need to be considered by the internal audit function before providing assurance to outside parties? Are their potential liabilities related to providing such assurances? Does the audit committee need to be informed and approval obtained? What if management takes a report and provides it to outside parties to give them assurance on controls when the report and engagement were completed with the intention of only internal use?

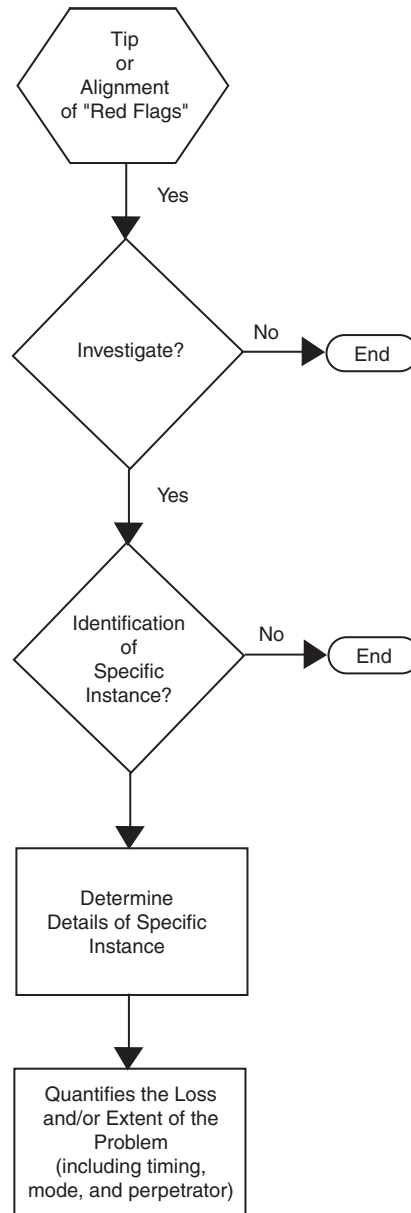
The Nature of Assurance in Fraud Investigation

Fraud investigation has long been a part of the services provided by internal audit functions. However, it does not fit easily into the attest and assurance framework. First, we must make the distinction between assurances that there is no fraud from fraud investigation. Assurance about the absence of fraud is of course something that most audit customers greatly desire and may well believe that they are getting, but for which financial statement auditors, and subsequently internal auditors, have gone to great lengths to avoid taking responsibility. This seems to be driven primarily to avoid liability problems on the part of financial statement auditors and accountability on the part of internal auditors. However, it may be possible that engagements could be designed to provide at least limited levels of assurance that no fraud is taking place. Such engagements may be very different in structure from the traditional audit, using improved statistical and analytical techniques to continuously monitor processes.

A fraud investigation engagement, on the other hand, arises from some triggering event or cue (a tip or alignment of “red flags”). After the decision to begin an investigation, the objective becomes to find evidence of a specific irregularity. If evidence is found, then details are determined regarding how the specific irregularity occurred (the timing, mode, and possible perpetrators). Then the objective becomes to quantify the extent of the loss and scope of the problem and determine the specific perpetrator. This process is illustrated in Exhibit 4-6 and is distinct from the process followed in other assurance services in that there are several sequential decision points at which the engagement may be terminated.

From a judgment and decision-making perspective there are a number of research questions that could be asked at each step. For instance, both descriptive and normative research into what sort of alignments of “red flags” trigger, or should trigger, the decision to pursue investigation is an area that already has developed a significant body of literature. Yet an equally (and some would argue more) important trigger given the dramatic increase in the use of “hot lines” is tips. How should these allegations be evaluated to determine if investigation is warranted? Are there characteristics of the allegation that influence how the cost of moving to investigation when no fraud is occurring should be balanced with the cost of not investigating when there is fraud? This is a decision that on any given day a significant portion of the population of internal auditors and compliance officers face, yet has been relatively unexplored by researchers (Anderson, 1995). Similarly in the next step in the process, as well as in the remaining steps, there are a number of questions that could be asked about the decision and judgment processes involved. For instance, what factors influence the decision to stop the investigation and conclude that no irregularities occurred?

Exhibit 4-6
The Fraud Investigation Process



In addition to the research questions surrounding the various decisions and judgments involved in the investigation process, what sort of assurance (if any) is actually provided by an investigation? Further, assuming some degree of assurance is provided through the investigation, is the level of assurance symmetrically related to the outcome (fraud found versus cases where no fraud is found)? Also, an issue for investigation is whether there should be standards of practice regarding how such investigations are conducted. The interesting aspect of this question is why have there been no standards developed for investigation when there is such a proliferation of standards for other assurance services? What is unique about the environment and process of fraud investigation that explains this lack of demand for standards?

Research Questions

- Do all engagements provide the same level of assurance? Is there a need for different levels?
- Does the amount of assurance attributed to a report vary as one moves from the operating level to executive management to the board?
- What factors in the structure of the report (presence of an opinion, length of report, quantification of findings, etc.) impact the user's attribution of assurance?
- What is the relation of evidence requirements to the type and level of assurance being provided?
- Should internal audit provide assurance to parties outside the organization? What are the risk and rewards of doing so?
- Can audit engagements be designed to provide at least some level of assurance that no fraud exists in an area?
- What sort of alignments of "red flags" trigger, or should trigger, the decision to pursue investigation?
- How should allegations of fraud be evaluated to determine if investigation is warranted?
- Are there characteristics of the allegation that influence how the cost of moving to investigation when no fraud is occurring should be balanced with the cost of not investigating when there is fraud?

- What sort of assurance (if any) is actually provided by a fraud investigation? Assuming some degree of assurance is provided through the investigation, is the level of assurance symmetric relative to the outcome (no fraud found versus fraud found)?
- Should there be standards of practice regarding how investigations are conducted? Why have there been no standards developed for investigation when there is such a proliferation of standards for other assurance services? What is unique about the environment and process of fraud investigation that explains this lack of demand for standards?

VII. Issues in Providing Consulting Services

The explicit consideration of the internal auditing function's provision of consulting services has evolved relatively recently and thus there is a significant need for research. In addition to the basic need for clarification of concepts and the fundamental questions addressed above, there are four other issues that are of particular relevance to practice:

- Blended engagements
- Balancing assurance and consulting
- Crossing the limits — are there bounds on the extent of consulting a function should do?
- The risk and rewards of providing consulting services

Blended Engagements

With the explicit recognition of consulting in the new definition of internal auditing and the development of distinct implementation standards for each, the question arises as to whether engagements can be structured to combine both assurance and consulting services. An example of such a potential engagement would be if one were undertaking an audit to evaluate the internal controls in a division that was selected based on the organizational-wide risk assessment. During the opening conference, the divisional manager asks the engagement team to extend its work and look at how the division could improve the efficiency of their order entry and tracking system and report the results back to her. The assurance engagement team and chief audit executive agree to look at the order entry and tracking system as well. How should this engagement be handled? Should the assurance team construct a separate engagement letter? What if, during the work on the tracking system, the team identifies several potential weaknesses in the controls, tells the manager, and she says to discontinue work, that she will take care of the weakness and then come back to the efficiency concerns later? Does the team continue to look at the control issues in the tracking

system? Do they include the weaknesses in their assurance report? Which set of standards should they look to for guidance? Is the converse the same — can a consulting engagement be extended into an assurance?

Balancing Assurance and Consulting

Over the past 20 years internal audit practice has made significant advances in risk assessment and the ability to systematically allocate audit resources to minimize residual risk. However, these risk assessment mechanisms allow systematic allocation over resources dedicated only to assurance services; they do not provide a mechanism for determining how to allocate resources between potential assurance and consulting engagements to maximize the audit function's value to the organization.

While a systematic mechanism has not been developed, chief audit executives (CAEs)¹ are daily facing this resource allocation problem. How are they making these decisions? The current environment offers a unique opportunity to study the factors influencing these decisions as in 2002 we have seen in the U.S. a dramatic change in the audit environment and a rapid radical shifting of demand for audit services among internal audit customers from consulting to assurance. Is this shift consistent across industries or is it more rapid in some industries than others? What other factors such as size, audit committee characteristics, ownership concentration, etc., affect this shift? Further, this change has occurred not just in the private sector, but also in governmental auditing with the revision of the independence standards by the GAO. Opportunities exist in this sector to construct studies that take advantage of comparisons in the ratio of resources allocated to assurance versus consulting across the various levels of government within the U.S. and, potentially more interesting, comparisons across countries.

Are there limits to how far an internal audit function can go in determining the balance? A case could be made for an audit function to allocate essentially all its resources to assurance activities and do no consulting, but could the opposite case be made? Could you have a “no assurance” internal audit function? It would seem a contradiction, yet there have been internal audit functions which have shifted their activities to the point where they are doing essentially no traditional audit work. In an article by Hawkins and Huckaby (1998), the authors describe how Arkansas Blue Cross and Blue Shield used a combination of control self-assessment and management certification to provide a basis for the CEO and CFO attestation of the control structure over financial reporting per COSO, and the subsequent issuance by the external auditor of a COSO attestation letter to the audit committee. In this process the internal audit function's key role is in training managers in risk assessment and

facilitating the self-assessment process, the actual assurance is obtained from the external auditor who tests a sample of the management certifications. A similar process of obtaining assurance over compliance is described in Crawford, Chaffin, and Scarborough (Chapters 1 and 6, 2001). Both of these examples build from the COSO framework with management at each level actually implementing the internal control framework of setting objectives and goals, assessing risk, designing control, implementing controls, and monitoring. The internal control process is then taken a step further with the certification process. The auditor's role in assurance, though critical, is minimal, being reduced to testing a sample of the certifications. However, the consulting activity involved in this approach is very high in terms of supporting the self-assessment and certification processes.

The self-assessment/certification strategy of providing assurance seems to be potentially very powerful and certainly offers an attractive potential for providing assurance on the internal controls to boards and external parties. It also raises a number of research opportunities. A rigorous analytical modeling of these processes could provide needed insights. Systematic testing of the strategies' effectiveness is also needed.

Crossing the Limits

Referring back to the Internal Audit Activity Continuum in Exhibit 4-4, is there a limit to how far an audit function should go on the consulting end? In particular, are remediation services incompatible with providing assurance services? The GAO's recent independence standards lay out a set of basic principles and seven safeguards that significantly restrict consulting activity for governmental auditors, and subsequent interpretations have set some further specific limits (GAO 2002a and 2002b). Although most remediation services are considered incompatible with auditor independence, some activities in this category are not (e.g., training). While these types of restrictions create significant issues for traditional governmental internal audit departments, outsource providers of government internal audit services are even more challenged in meeting these requirements. Audit committees in the private sector appear to be following along this trend as well.

In addition to independence and objectivity considerations, there may be other reasons for internal audit functions to limit the extent of their consulting activities. While there are many possible consulting services that internal audit could provide, it is not clear that internal audit has a competitive advantage in all areas. Should internal audit limit its consulting activities to its defined domain of risk management, control, and governance processes? Why do internal audit functions undertake consulting services outside their defined domain?

The Risks and Rewards of Providing Consulting Services

Finally, what are the risks and rewards of internal audit providing consulting services? Antidotal evidence suggests that potential risks include internal auditor loss of objectivity, damage to the function's reputation when consulting projects fail, not meeting assurance responsibility, negative political exposure, and cost and time overruns. However, a systematic examination is needed to identify what are the risks to the audit function in undertaking consulting services, what particular factors can lead to failure, and what policies and procedures need to be put into place for the function to manage these risks. Similarly, on the reward side, providing consulting services offers the promise of added value to the organization, improved internal audit relations with operating management, greater exposure for staff, and enhanced career opportunities for staff. Systematic study is needed to see if such rewards are realized and how they can be measured.

Research Questions

- Can consulting engagements be structured to provide assurance?
- Can a mechanism be developed to allow internal audit functions to systematically allocate resources between assurance and consulting to maximize internal audit's value to its organizations? How do changing customer demands influence the balance between assurance and consulting services?
- Can an internal audit function only provide consulting services?
- Are there consulting services that internal audit should not provide?
- What are the risks for the internal audit function in providing consulting services and how can they be managed?
- What are the rewards of providing consulting services and how can they be measured?

VIII. Summary

In striving to add value to the organization, internal auditing provides a variety of different services to a number of types of customers — each type with its own distinct needs. Past research has focused on a relatively narrow range of this service spectrum, for the most part investigating internal audit's role in providing assurance on internal control, thus there is a significant opportunity for researchers to examine these other services. In this chapter, we also considered two of the audit function's most extreme customers — the audit committee and operational managers — and discussed how their demands on the internal audit function not only differed in how value is added, but are in potential conflict. Research could significantly improve our understanding of how internal audit functions currently manage to trade off these conflicting customer demands and potentially provide significant improvement in practice through the development of mechanisms for optimizing resource allocation across the service spectrum. Additional research questions were identified in the discussion of current issues in providing assurance and consulting services. The appendix to this chapter provides a summary of these research questions identified.

IX. Appendix I: Chapter Research Questions

Adding Value

- What are the various value chains through which internal audit adds value to its customers?
- How do characteristics of the organization such as industry, size, regulatory environment, and organizational structure change the potential to add value through these various value chains?
- What are the mechanisms used by internal audit management to balance the demands of the various internal audit customers?
- Is the multi-product approach more effective in meeting customer demands than the traditional single product (the traditional internal audit) approach? What organizational factors (if any) must be in place for the multi-product approach to be successful?
- Is the traditional internal audit an effective way of meeting the demands of operational managers (the demand for consulting services)?
- Is there a primary (ultimate) internal audit customer? If so, who is it? Does this ultimate customer depend on any organizational or environmental characteristics?
- What will be the effects on the mix of services if The IIA-recommended shift to direct reporting to the audit committee takes place? Will such a shift hinder internal audit's ability to add value to the organization? Will it increase tension between auditor and auditee? Will it have a chilling effect on the internal audit function's relationship with senior management?

The Assurance/Consulting Continuum

- If one views the primary role of professional standards for auditing and assurance as protection of the interest of third parties, what is the minimal requirement for a set of standards and how do they vary with characteristics of the assurance service and of the third party?
- Must an assurance engagement result in the communication of an opinion?
- Are there any non-discretionary consulting engagements?

Assurance Services

- Does auditing performance measures add value? Who are the customers for such attestations? Is the increased adoption of the balanced scorecard approach in the private sector creating a demand for such services?
- Is the traditional performance audit obsolete? Can assurance on internal controls be more effectively and efficiently obtained without the traditional focus on process improvement as well?
- Is fraud investigation an assurance service? Who are the customers and how is value added?
- Are separate implementation standards needed for fraud investigation? Would the adoption of such standards have significant ramifications for challenges in court to investigation results?
- How can the internal audit function demonstrate that the assurance engagements it has performed have added value to the organization?

Consulting Services

- How do internal audit functions determine which consulting engagements to accept?

Issues in Providing Assurance Services

- Do all engagements provide the same level of assurance? Is there a need for different levels?
- Does the amount of assurance attributed to a report vary as one moves from the operating level to executive management to the board? What factors in the structure of the report (presence of an opinion, length of report, quantification of findings, etc.) impact the user's attribution of assurance?
- What is the relation of evidence requirements to the type and level of assurance being provided?
- Should internal audit provide assurance to parties outside the organization? What are the risks and rewards of doing so?

- Can audit engagement be designed to provide at least some level of assurance that no fraud exists in an area?
- What sort of alignments of “red flags” trigger, or should trigger, the decision to pursue investigation? How should allegations of fraud be evaluated to determine if investigation is warranted? Are there characteristics of the allegation that influence how the cost of moving to investigation when no fraud is occurring should be balanced with the cost of not investigating when there is fraud?
- What sort of assurance (if any) is actually provided by a fraud investigation? Assuming some degree of assurance is provided through the investigation, is the level of assurance symmetric relative to the outcome (no fraud found versus fraud found)?
- Should there be standards of practice regarding how investigations are conducted? Why have there been no standards developed for investigation when there is such a proliferation of standards for other assurance services? What is unique about the environment and process of fraud investigation that explains this lack of demand for standards?

Issues in Providing Consulting Services

- Can consulting engagements be structured to provide assurance?
- Can a mechanism be developed to allow internal audit functions to systematically allocate resources between assurance and consulting to maximize internal audit’s value to its organizations? How do changing customer demands influence the balance between assurance and consulting services?
- Can an internal audit function only provide consulting services?
- Are there consulting services that internal audit should not provide?
- What are the risks for the internal audit function in providing consulting services and how can they be managed?
- What are the rewards of providing consulting services and how can they be measured?

Footnote

¹CAE refers to the term “chief audit executive.” This is the top position within an organization responsible for the internal audit function. This is the internal audit director (general auditor, inspector general, etc.) in traditional internal audit structures. However, when internal audit services are obtained from outside providers, the CAE is the person responsible for overseeing the service contract and other duties specified in *Standards 2010 to 2060*.

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CHAPTER 5
AUDITING RISK ASSESSMENT AND
RISK MANAGEMENT PROCESSES

William R. Kinney, Jr.

Disclosure

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I. Introduction

Internal auditors provide assurance about the reliability and relevance of an entity's information and internal control. In an environment characterized by rapid change, global competition, new organization forms, and improved information technology, measures of an entity's current state and recent past are relatively less important, while information about and measures of what might happen in the near and even distant future are more important. In simple terms, there is a shift in emphasis from the internal audit function (IAF) "counting the beans" to threats to strategies and processes for bringing beans to market and selling them at an acceptable profit.

In today's environment, a thoughtful and forward-looking CEO might ask:

- Do possible external environment changes threaten achievement of my company's strategy objectives?
- Are factors that might impair my business processes within reasonable limits?
- Could assets of my company be stolen?
- Do internal processes, displays, and reports provide adequate measurement and communication of threats to assets, processes, and strategy achievement?
- Are my reports to outsiders in compliance with applicable standards, laws, and regulations?

All five of these questions are about possible real-world events that might seriously threaten a firm and are the subject matter of enterprise risk management and monitoring by the IAF.

Accountants and auditors are increasingly called upon to measure and report on threats to a business entity. The last decade-mandated external financial reporting reflects the new "rapid change" environment through expanded requirements for disclosure of risk assessments by management, through expanded management discussion and analysis in financial statements, and through increased disclosure of the sensitivity of accounting estimates to possible changes in assumptions. At the process level, several countries now require management or director assertions that they have adequate internal control, including risk control processes (see Miccolis et al., 2001, pp. xxiv-xxvi, for a summary). Inside the firm, the rapid change environment has had even more dramatic effects with the emergence of a chief risk officer (CRO) and development of risk management departments in many entities today.

At the standards setting (or measurement criteria) level in the U.S., the Committee of Sponsoring Organizations of the Treadway Commission (COSO, 2002) is redefining and extending its internal control framework as enterprise risk management (ERM). Management is responsible for ERM design and all personal help implement it. The board of directors oversees management's design and operation of ERM, while the IAF assists by ongoing separate evaluations of ERM's effectiveness. Through COSO, ERM provides an important basis for assessing the role of the IAF in auditing risk assessments and the risk management process.

This chapter outlines some of the opportunities for scholarly research about the role of the IAF in evaluating risk assessments and processes and reporting results. Specifically, we consider the relation of the IAF to long-term business strategy and its continuous implementation, and the role of risk as a tool for early warning of the need for changes in strategy or its implementation. We also consider the historical risk assessment and management roles of financial reporting, auditing, and the IAF. We do this within the framework of enterprise risk management as recently defined by COSO (2002).

II. Accounting, Internal Auditors, and Risk

Most agree that comprehensive risk assessment is increasingly important for success (or even survival) of an entity, but how to go about it systematically is open to debate. Part of the problem is the difficulty of measuring threats or risks. For example, quantifying past sales is relatively easy compared to quantifying threats to expected future sales. Threats are *possibilities*, and at any point in time there are many possibilities (and combinations of possibilities) leading to problems in assessing and reporting on ranges of possible outcomes. A second problem is risks can change rapidly and possible changes must be identified before they can be measured. Third, threats can't be fully evaluated even after the passage of time because some don't materialize and others arise but are prevented or mitigated by control activities. Finally, there is no natural measurement process and point in time for risk measurement as there is in measuring a sale, the purchase of an asset, or incurrence of a liability or expense.

The accounting process and the IAF have historically measured and analyzed the results of implementing operating plans, but not the risks faced. This means that a measurement system for risk must be developed. Thus, even though risk measurement is inherently more complex than measurement of the current state, its increasing importance for understanding a business demands a comprehensive business measurement system subject to appropriate monitoring for both management and relevant outsiders.

One way to characterize a business entity (the firm or a segment) and the risks it faces is in terms of its stated long-term goals, the strategy that management has chosen to achieve these goals, and the business model and operating plans for guiding actions to implement these strategies over a shorter period. Business risks are defined here as “threats to achieving the entity’s objectives.” These threats affect interpretation of accounting measures of financial performance and conditions. The threats can be measured and classified in various ways, and occur throughout the chain of events outlined above.

Public accountants and auditors have experience with aggregate financial disclosures for an enterprise. In the U.S., they have also become experienced in the reporting of risk assessments through the American system of accounting disclosures, securities regulations, and corporate governance (e.g., the AICPA’s SOP 94-6 and the SEC’s Management Discussion and Analysis required of registrants). External auditors also have some experience attending to management assertions about compliance with COSO’s criteria for internal control in the U.S. and CoCo in Canada.¹

The IAF has played a key role in evaluating internal control over risk assessments and control activities through implementation of COSO and compliance with external disclosure requirements discussed above. Thus, while they have had experience measuring profitability and progress toward achieving financial objectives, and also developing accounting systems for measurement, accountants in North America have had less experience with forward-looking risk assessments and risk assessment systems. The same applies to auditors.

By its nature, risk involves more than one possible real-world condition or event that has occurred or might occur in the future. Thus, numbers, categories, or labels to represent risk assessments are different from business process measures of a single condition at a point in time. This means that there is no single answer that can be determined to be correct in measuring or auditing risk assessments. There is inherently more uncertainty in auditing risk assessments than auditing the current cash or inventory balance. The multiple possibilities for joint occurrence of risks greatly complicate measurement of and auditing risk assessments and processes. Furthermore, the evaluation of ERM performance is hindered by the difficulty of determining whether occurrence of an undesired event is due to bad event identification, bad risk assessment, bad information, bad modeling, bad strategy, bad implementation, or simply bad luck. Yet each cause has different and important implications for the future.

Types of Business Risk

Determination of business objectives and strategies to achieve them is beyond the scope of enterprise risk management. However, assessments of all potentially serious risks inherent in strategies and business processes are part of internal control and are essential for evaluating the relevance and reliability of information and its context.

In developing a comprehensive list, business risks can be classified in many ways. One useful way is:²

External Environment Risks — threats from broad factors external to the business including substitute products, catastrophic hazard loss, and changes in customers' tastes and preferences, competitors, political environment, laws/regulations, and capital and labor availability.

Business Process and Asset Loss Risks — threats from ineffective or inefficient business processes for acquiring, financing, transforming, and marketing goods and services, and threats of loss of firm assets including its reputation.

Information Risks — threats from poor-quality information for decision-making within the business (i.e., the risk of being *misinformed* about real-world conditions due to using measurement methods that are not relevant, from careless or biased application of measurement methods or their display, or from incomplete information).

Information risk overlaps somewhat with external environment and business process risks because the risk of being misinformed may be about an external environment, business processes, or asset loss risk. Information risk also applies to the risk of providing erroneous or misleading information to outsiders. The latter risks may make management liable for statements about risk just as it does for bad financial and other information.

Exhibit 5-1 presents more details of risks in each of the three broad categories. The external environmental category includes longer-term factors external to the firm that are largely beyond management's control. Catastrophic natural events (sometimes called hazard risks) are not controllable by management, yet management can limit the enterprise's exposure to their effects. Similarly, management can influence environmental change to some degree through research and development of technology, advertising, and lobbying of governments. But mostly these factors are constraints to which management must respond. Timely information about environmental change is important since management has more options (and probably lower cost options) if it has more time to react.

**Exhibit 5-1
Principal Business Risks by
Broad Categories**

External Environment	Business Processes	Information
<p>Catastrophic events (natural disasters, economic collapse, social revolution)</p> <p>Environmental change</p> <p>Customers' tastes and preferences</p> <p>New (substitute) products</p> <p>Technology</p> <p>Competition</p> <p>Labor, materials, and capital availability and cost</p> <p>Political/cultural climate</p> <p>Laws and regulations</p>	<p>Inefficient or ineffective business</p> <p>Loss of assets (due to theft, fraud, erosion, accident, obsolescence)</p> <p>Tangible</p> <p>Intangible (patents, goodwill, human resources (capabilities, trust, flexibility, adaptability, morale)</p> <p>Market-based (customer base, satisfaction and loyalty; product quality, supplier quality, alliance partner reliability)</p> <p>Financial risk (credit, interest rate, market, currency, collateral, counter-party)</p> <p>Improper incentives to employees and trading partners</p> <p>Reputation loss (integrity risk)</p> <p>Unethical behavior</p> <p>Unacceptable practices by employees or management</p> <p>Illegal behaviors by management, employees, or trading partners</p>	<p>Operations</p> <p>Unauthorized access to information</p> <p>Inadequate recorded accountability</p> <p>Internal information not relevant, reliable, complete, integrated, or accessible</p> <p>Financial reporting reliability</p> <p>Unreliable or incomplete financial information for internal decision-making or provided to outsiders</p> <p>Compliance</p> <p>Inadequate communication of laws and regulations for financial information, internal control, safety, human resources, and environment</p> <p>Internal behavior codes of expected behaviors and practices</p> <p>Contract requirements</p> <p>Inadequate information about failure of management, employees, or trading partners to comply with applicable laws, regulations, contracts, and expected behaviors</p>

Kinney, W.R., *Information Quality Assurance and Internal Control for Management Decisions* (Boston: Irwin McGraw-Hill, 2000).
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A Business Risk Example: Guinness PLC

Guinness is a UK firm with two major business units and product lines — distilled spirits (United Distillers, Johnny Walker Black) and brewing (Guinness Brewing Worldwide, Guinness Ale) — and employs about 23,000 workers worldwide. Guinness management conducted a comprehensive risk analysis with a goal of managing “where we can, and . . . transfer risk to third parties where this is cost effective.”³

Exhibit 5-2 illustrates how Guinness manages selected environment and business process risks that it has identified, and some possibilities for information risks (Kinney, 2000, p. 63). In Exhibit 5-2, selected potentially important risk exposures are identified and listed along the real-world source of the risk. Each listed risk is assessed as to its possible magnitude (e.g., possible monetary loss) and the probability of a loss of that magnitude. Then, management’s response to risk is entered. Some risks are avoided at the source, some are transferred or shared, and some are reduced by control procedures. All risks are monitored for changes, with some monitored on a more or less continuous basis and others only periodically.

External Environment Risks — Longer-term external factors related to alcohol consumption are important to Guinness as a maker of alcoholic beverages. Customer tastes and preferences for distilled spirits and brewed products determine aggregate demand and growth potential. Tastes and preferences vary by region, religion, and culture, and over time with trends in lifestyles and alternative products. Guinness tries to limit the effect of changes in tastes and preference by building its reputation for offering a premium quality product within its market.

Cultural climate risk reflects attitudes of non-customers as well as customers within a country, state, province, or municipality. Changes in social attitudes can also lead to increased regulation of the final product through prohibition of sale and strict liability laws (e.g., drunk driving laws). To mitigate cultural risks, Guinness has promoted responsible use of alcoholic products.

Finally, because of restrictions on Scotch whiskey production and aging, catastrophic loss risk for aging facilities is potentially important. Guinness considered the risk of catastrophic loss of aging facilities due to, say, a plane crash. A plane crash could destroy a small aging facility and could wipe out Scotch in process for up to a 10-year period. However, Guinness management concluded that because of the large size of its facilities, the likelihood of catastrophic loss was virtually zero and that any reasonably possible loss magnitudes could be endured. Thus, dispersion of aging facilities to many locations is judged not worth its cost — management simply accepts the risk.

Exhibit 5-2
Partial ERM Components Chart for Guinness PLC

Event identification for all potentially important risks	Assess Risk		Risk Response and Risk Control Activities			
	Exposure magnitude	Prob.	Accept	Avoid	Transfer/share	Risk monitoring
External Environment Catastrophic loss of production or storage facilities						
Terrorists	H	L		no breweries in hostile cultures		review political environments quarterly
Plane crash at Scotland aging facility	VH	VL	accept			review annually
Laws and regulations						
Restrictive regulation adoption	M	L			“responsible use” promotion	review annually
.						
.						
.						
Business Process and Asset Loss						
Financial risk						
Fluctuation in foreign currency exchange rates over next 10 years	M ¹	M			share with customers (brand loyalty)	review quarterly
Counter-party risk for hedges	L	L	accept			review quarterly credit reports

Kinney, W.R., *Information Quality Assurance and Internal Control for Management Decisions* (Boston: Irwin McGraw-Hill, 2000).
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Exhibit 5-2 (Cont.)

Event identification for all potentially important risks	Assess Risk		Risk Response and Risk Control Activities			Risk monitoring
	Exposure magnitude	Prob.	Accept	Avoid	Transfer/share	
Ineffective business processes Product and delivery quality	M	L			production quality controls/ delivery scheduling	monitor quality daily/weekly
Loss of assets - market-based customer loyalty	H	M			brand image promotion	measure customer attitudes monthly

Information Deficiencies²

- External environment change information
- Leading indicators not processed or communicated
- Competitive or supply information not communicated
- Business process and asset loss information
- Asset loss not discovered/
reported on timely basis
- Public reports are materially misstated
- Financial statements
- Environmental impact reports
- Fair labor practices assertions

¹L, M, H, and VH denote very low, low, moderate, high, and very high magnitudes and probabilities of possible loss respectively.
²Risks are the author's speculation rather than a communication of Guinness PLC. Risk assessments and responses and monitoring would parallel traditional auditing and application of the ERM monitoring discussed throughout this chapter.

Business Process Risks — Guinness' business process risks are interrelated. Currency risk for Guinness is high because, to be "Scotch," Scotch whiskey must be made and aged in Scotland, and the process can take up to 10 years to complete. The finished product is sold around the world in local currencies and transferred at time-of-sale currency exchanges rates. Guinness hedges its input resource commitments a year ahead, and relies on brand loyalty and the related price inelasticity that will allow raising prices to hedge final product currency fluctuations.

Brand loyalty is an important market-based asset, and risk of its loss is a very important risk. Brand loyalty is protected by effective promotion and marketing of consistently high-quality products (related to customer satisfaction risk and product quality risk). Customer satisfaction and product quality are key nonfinancial success factors that are continuously measured and closely monitored by management.

Information Risks — In the case of Guinness PLC, the information risks in Exhibit 5-2 are not necessarily the information risks that Guinness management perceives and addresses. Rather, they have been included to illustrate some possibilities (Guinness' information risks are unknown).

III. Enterprise Risk Management (ERM)

Business risks exist throughout an enterprise and must be managed individually and in the aggregate. Enterprise risk management is defined by COSO (2002) as —

a process, effected by an entity's board of directors, management, and other personnel, **comprising internal control and applied in strategy and across the enterprise**, designed to provide reasonable assurance regarding the achievement of objectives in the following categories:

- Effectiveness and efficiency of operations
- Reliability of financial reporting
- Compliance with applicable laws and regulations

(**emphasis added** to distinguish expansion of COSO's definition of internal control, which is subsumed by ERM).⁴ Thus, ERM is broad in scope and includes traditional internal control over transactions, assets, and operations.

According to COSO (2002), ERM provides risk information to the **board of directors** about the most important entity risks and how well risk is being managed, including risk-adjusted

measures of performance. The **board of directors** is responsible for overseeing management’s design and operation of ERM. **Management** is responsible for the design and operation of an entity’s enterprise risk management, and **all personnel** have some responsibility for successful execution of ERM. The IAF is typically responsible for evaluations of the effectiveness of the ERM.

ERM has seven components:

- Environment
- Event identification
- Risk assessment
- Response
- Control activities
- Information and communications
- Monitoring

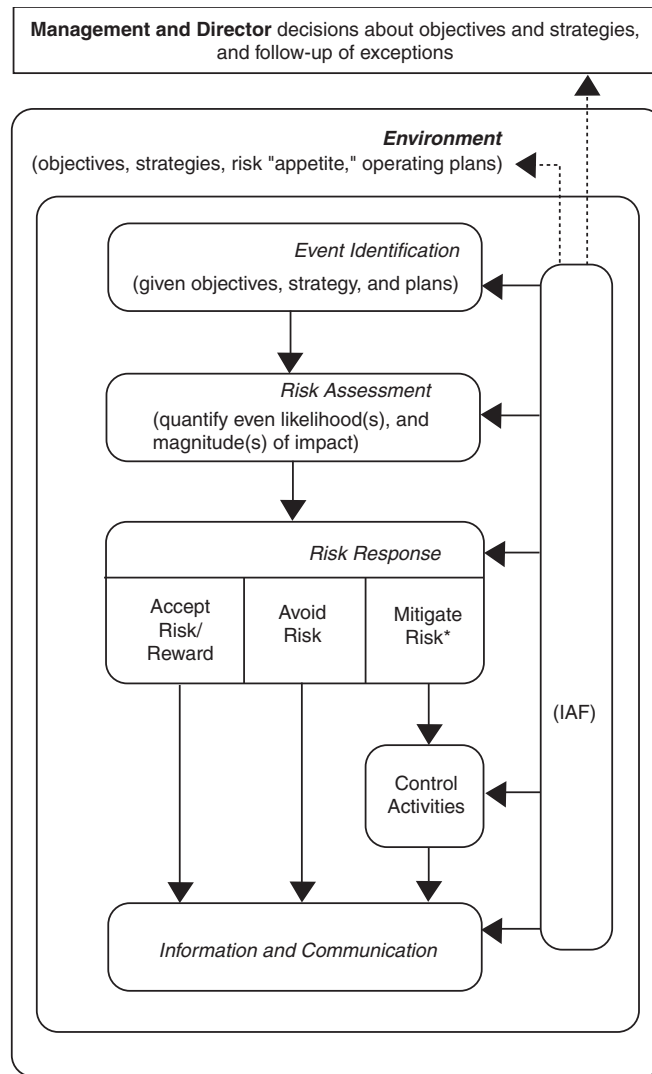
The components (discussed below) are interrelated and all must be present for effective ERM.

ERM (depicted in Exhibit 5-3) will be used to structure this chapter and the research questions for research opportunities in internal auditing for risk management. As shown in Exhibit 5-3, ERM is very broad. It includes all management activities except for decisions about enterprise objectives and strategy, and follow-up of exceptions noted in monitoring of ERM.

Environment

Directors and management determine the objectives of the entity, its strategies to achieve objectives, a business model detailing how business processes interrelate, and operating plans to implement strategies in the short-run. These choices comprise the **environment** for ERM and provide the framework within which the other components operate. The **environment** also includes what might be called a “philosophy about risk management” and an “appetite” for risk to define how it wishes to incorporate possible adverse unexpected events — some of which **will** occur. Management (and directors) must decide how to deal with the risk/reward trade-offs implicit in a strategy and its implementation. Attitudes toward risk will affect which business activities the enterprise undertakes, and it will implement strategies only if it can limit risk inherent in a strategy to an acceptable level.

Exhibit 5-3 Enterprise Risk Management, Management Decisions, and the Internal Audit Function



*Hedging, derivatives, internal controls, insurance, pricing, diversification, joint ventures, and design/implement control activities.

In considering an approach to managing its risks, management addresses how external environment factors, internal (process) factors, and information about these factors, as well as how they combine and interact to shape the entity's overall risk position or "profile."

Event Identification

Given an understanding of an entity's objectives, strategy, and plans, along with consideration of current external and internal conditions, ERM requires identifying all of the important conditions (or events) that might occur that could adversely affect the achievement of the entity's objectives. This critical step requires knowledge of the entity as well as business in general, as well as the current and likely future environment, and how to link knowledge of various types. The identification step is critical because possible events not identified may **not** be addressed in planning responses and accepting risk, thus leading to unplanned exposures.

Risk Assessment

Risk is typically assessed along two dimensions — the **likelihood**, or probability, that a given adverse event will occur, and **impact** of the event on operations, financial reporting, and possibly strategy if the event does occur. Some risks are discrete (e.g., a \$5,000,000 fine if judged to have violated an ordinance) and some are continuous with a range of possible results associated with an event, each with a likelihood of occurrence. Measures for likelihood are also discrete or continuous. Measures of potential impact may be in terms of possible disruption of operations, amounts, monetary loss, or impairment of strategy objectives.

Risk assessment across an enterprise requires a combination of qualitative and quantitative methodologies. Quantitative assessment is possible when sufficient data are available. Qualitative assessment methodologies may be used where potential likelihood and impact are low or where numerical data and expertise for quantitative assessments are not available. Qualitative assessments may also be used for high-impact events that require substantive expertise for assessment. Finally, no matter how the risk for individual events is assessed, many events tend to occur together. This leads to a need to consider the (joint occurrence) risk that two or more events will occur simultaneously.

Risk Response

An entity evaluates the risk/reward trade-off for each important risk. Depending on the trade-off, it can respond to risk by accepting, avoiding, or mitigating risk. Mitigation includes

sharing, transferring, or reducing risk (including control activities as discussed below) depending on the risk/reward trade-off, price, and the entity's risk appetite. Responses are integral components of ERM, but the specific response selected is not. As with choice of objectives and strategy, the choice made by local and top management is part of management's broader role. Responses are typically reviewed *ex post* for possible improvement, however.

Control Activities

Control activities are the policies and procedures designed by management to provide reasonable assurance that the chosen risk mitigation responses are implemented. Control activities are applied throughout the organization and include approvals, authorizations, cancellations, confirmations, observations, verifications, reconciliations, reviews of operating performance, physical security of assets, and segregation of duties. Internal auditors are familiar with control activities for financial reporting, and ERM extends the concept to responding to all risks.

Information and Communication

Risk identification, assessment, response, and control activities can provide necessary risk information at all levels of an entity. But like financial and other information, risk information must be communicated in a form and time frame that enables workers, management, and directors to carry out their various responsibilities. Because of the complex and subtle nature of risk information, communication may involve more than mere display.

Information systems for risk assessment can generate periodic and real-time exception-based reports that facilitate day-to-day decisions and longer term decisions. According to COSO, "Reports may include lagging or forward indicators, performance metrics, and operational or financial results." For ERM at the entity level, multiple data and information flows must be aggregated (and integrated) to communicate an overview on the entity's portfolio risk profile.

Effective communication involves downward flows (communicating management's plans and known risks to employees), parallel flows (personnel communicating production and distribution risks across departments), and upward flows (employees informing top management of surprises). Part of an effective ERM environment regarding communication is recognition by employees that risk management is to be taken seriously and that employees are expected to communicate significant risks upstream.

Monitoring

As with internal control, an entity monitors the effectiveness of enterprise risk management and its components through day-to-day monitoring activities and separate evaluations. Day-to-day monitoring (or “ongoing monitoring,” in COSO terms) occurs in the normal course of business as events and transactions take place. It includes ordinary management and supervisory activities in conducting transactions. “Separate evaluations” of ERM may be based on either planned periodic examinations or follow-up of exceptions arising in operations or day-to-day monitoring. The IAF is often the preferred provider for separate evaluations of ERM because of internal auditors’ competencies, skills, and experiences with independent investigation, risk assessment, and reporting.

IV. ERM Performance Monitoring by the Internal Audit Function

We now consider the IAF’s risk assessment and risk management role in more detail and identify scholarly research opportunities. In particular, we outline the IAF’s role in performance monitoring for each of the seven components of COSO’s ERM model and list inherent assumptions, functions, and linkages that are open to questioning and could benefit from scholarly inquiry.

The Environment — Objectives, Strategy, and Risk

The managers and directors of an enterprise determine its objectives, strategies to achieve objectives, and a business model and business processes to implement strategies.⁵ Core and supporting business processes facilitate strategy implementation with the entity’s suppliers, workers, capital providers, customers, and competitors. Business measurement systems are designed to measure and display key success factors for achieving objectives as well as risks of events that might happen to impair success. The measurements facilitate planning and coordination of day-to-day activities, as well as subsequent evaluation of performance.

In addition to deciding what business to be in and strategies, models, and plans for the business, management and the directors decide how much risk they are willing to take in attempting to achieve their objectives. For some entities, management and the directors are willing to bear considerable risk because of high expected reward, either for the entity itself, or for related objectives. For other entities, management and the directors are unwilling to bear much risk. These attitudes toward risk can be called a “risk appetite.” The appetite, then, is part of the environment for ERM in that it helps in evaluating important risks and deciding how carefully these risks must be identified, assessed, responded to, controlled, and monitored.

Overall entity risks implicit in a strategy and business plan provide an overall framework within which the other six elements of ERM operate. The objectives and risks appetite provide overall parameters for ERM. Risk assessments can provide a “risk profile” for periodic comparison with the “risk appetite” or limits the entity has set on residual risks (i.e., risk after response and control activities) it wishes to bear. The monitoring component is somewhat different from the others in that it may provide feedback to management and the directors when the assumptions implicit in the environment seem to have been violated by changes in the external environment or in the business processes of the firm. The overall environment must then be translated downward in the organization into risk management for sub-entities and segments of entities and time segments.

Information Technology, Risk, and the Environment

The ERM environment has become increasingly important in recent years due, in part, to changes in information technology and related developments. Information technology can communicate to all parties (including competitors) information about changes in the environment and has reduced the time available to react to environmental change. It has also streamlined and altered the design of business processes, and even changed the optimal form of organization for some enterprises. These developments have led to downsizing of businesses, automation of controls and communications, and fewer employees devoted to control activities. In turn, these changes affect the nature and magnitudes of risks faced. Furthermore, information technology allows operating efficiencies such as just-in-time materials arrival (eliminating materials inventory) and outsourcing of many support activities.

Information technology has changed the underlying assets and risks of businesses. An example is the risk of deterioration of market-based assets such as the value of a supplier network that effectively outsources production and inventory management and a customer base. Outsourcing reduces investment in equipment and labor but increases business risks when a key trading partner fails to perform. Customers depend on products and services that in turn depend on performance of suppliers. Managers need to know about the risk profile of trading partners and the risks unique to their failure to perform. The changes also alter the effectiveness of traditional controls over information and safeguarding of assets with many traditional recording and control activities automated in software. Automation also changes the focus of monitoring from detection and correction of errors to prevention of errors.

Research Questions

1. How can (should) management and the IAF systematically link entity strategies and business models to risks that threaten their achievement?
2. Should risk measures be formally incorporated into planning performance measurement and compensation? If so, how?
3. How do managers (directors and employees) interpret risk (and audit risk) reports?
4. Can risk templates help management and IAF develop an appropriate risk environment? If so, for which elements?
5. How does outsourcing of various functions change the risk environment and expose the entity to new risks?
6. How does information technology affect risk, risk assessment, and risk management?

Risk Event Identification

The approach to risk management outlined by COSO (COSO, 2002) is based on identification of possible risk events that could threaten achievement of objectives. Event identification is based on the **environment** and requires mapping the environment to possible risks.

Exhibit 5-4 diagrams ERM's risk assessment and control steps. It includes a column for the implicit insertion being made in the ERM process about the validity and accuracy of risks identified and managed. The remaining columns outline possible auditing procedures applied by IAF to verify the validity of the assertions. Thus, the auditing of risk assertions is parallel to auditing of financial statement assertions by financial auditors.

The first step in Exhibit 5-4 is the identification of *all* potentially serious risks. To manage risk for the company as a whole, a *complete* list of risks faced by the enterprise (or segment) is essential. Only from a complete list of potentially important risks (see *Ashby's Law of Requisite Variety* in Hare, 1967) can management be assured that threats to achieving its objectives are adequately assessed, reasonably contained, and economically managed.

Exhibit 5-4
Risk “Assertions” and Auditing Procedures for “Separate Evaluations”
Monitoring of ERM Audits by IAF

ERM Component	Implicit assertion(s)	Separate evaluation monitoring procedure(s)
Environment	Objectives, strategy, and plans are reasonable given external environment and available resources; primary threats (risk events) have been considered.	Evaluate for reasonableness at the “Inherent risk” (pre-ERM) level and “residual risk” (after ERM) level.
Event Identification	All important risk events have been identified; completeness given. Environment: existence/ownership.	Independently derive all potentially important risks given. Environment using templates, analysis, linkage tools mapping strategy and business model to existing environment and business processes.
Risk Assessment	Valid risk quantification given Event Identification (likelihood, impact).	Analyze/evaluate assumptions, calculation method; re-perform calculations, evaluate risk interactions (scenario building, joint occurrence, “worst case” scenarios).
Risk Response	Proper response given Risk Assessment and Environment .	Analyze/evaluate implicit risk/reward trade-off for reasonableness; evaluate counter-party risk for risk sharing/transferring/reduction responses.
Risk Activities	Control activities and cost effective Risk Responses .	Test effectiveness of response by analytical procedures and tests of details, assess value-at-risk, control activity effectiveness, and achieved risk (after Risk Responses).
Information and Communication	Risk information is effectively communicated on timely basis to appropriate persons.	Evaluate reporting system including distribution list (per Environment); test personnel understanding of risk reports and “red flag” exceptions.
Monitoring (ongoing or day-to-day)	Personnel execute appropriate monitoring of risks on a continuous basis.	Observation, exception review, decomposition of planned vs. recorded accountability.

Risk identification is a difficult task due to most individuals' lack of familiarity with business strategy and threats inherent in strategies and business planning. Internal auditors are often among those lacking familiarity. Of particular importance in risk identification is being *complete in the identification* — how can management or the IAF know that **all** important risks have been identified?

Study of business strategy concepts and practices can help management or the IAF identify some risks because there are many commonalities in business activities — what applies to one entity will typically apply in some form to another. Templates based upon various types of strategy or types of commercial activity can provide a checklist for risk identification. On the other hand, many new business ventures are undertaken because management sees a competitive advantage in following a strategy that does not emulate aspects of past strategies. For these situations, managers and the internal auditor must be innovative in determining any complete list of risks. For example, they might use activities such as “brainstorming” by various personnel with different backgrounds and expertise, and “scenario building” to generate ideas about possible threats. Neural networks have been explored as one way to exploit recognition of patterns in various data that can suggest possible risks as they develop (Ramamoorti and Traver, 1998).

A relatively new problem for risk assessment is assessing risks arising from outsourcing of business processes, including supply chain management. The problem arises because with outsourcing, entity personnel may not be intimately familiar with the operations of their supplier and thus not know what risks the supplier faces. In turn, the entity may not anticipate risk events that affect the supplier, which in turn affect the entity (Miccolis et al., 2000), for the different reactions of Ericsson and Nokia to a common supplier's disruption due to a hazard loss.

Research Questions

1. How does the inherent unobservability of second moment (variance or risk) vs. first moment (total or mean) affect risk assessments and how they are interpreted by management, personnel, and directors?
2. Can brainstorming and scenario building be used systematically to assist in identification of relevant risks for entities? If so, how should they be conducted?
3. How should covariation or joint occurrence of risk events be incorporated into risk assessments (e.g., conditional probability vs. joint probability)?

4. Do risk event identification techniques differ between hazard, operations, financial, strategy, and other risks?
5. How can IAF systematically audit completeness of risks of various types?
6. How can outsourcing risks be identified and measured?
7. Do risk templates that suggest consideration of specific types of risk limit IAF creativity in assessing completeness of risks (i.e., reduce “output interference”)?

Risk Assessment

After all potentially important risks are identified, they must be measured as to their *magnitude* — the monetary loss or degree of adverseness if the event occurs — and the *probability* that an adverse event of a given magnitude will occur. Some events are catastrophic as to potential impact magnitude, but low in probability of occurrence, while other events have small loss magnitudes individually, but have high probability of occurrence and thus may be important in the aggregate. Determining the ultimate cause(s) or source(s) of each risk is important in seeking the best solution.

Risk events are yes/no conditions — either the event occurs or it does not. However, many events have different degrees of adversity associated with them. For example, the simplest case is possible loss of a fixed dollar amount. In many business activities, however, the amount may be a random variable (e.g., one may win or lose a lawsuit, but given loss of the suit, the damages could be one of a wide variety of possible amounts, each with its own probability of occurrence). Because risk is complex, the assessment of risk is also complex and so is the communication of those risk assessments.

One problem with ERM is how best to measure and communicate risks. The most common method in practice today is to assume or act as if there is a simple probability of the event and of a single magnitude. This method works well for discrete events, but not necessarily for continuous events. Risk of events can be assessed as a probability density function, as the expected value of the loss event, or as the risk of loss of a given magnitude or higher. Each has its advantages and limitations, and each is best for certain scenarios. A problem in ERM design is how to trade off measurement accuracy or “representational faithfulness” with understandability of risks.

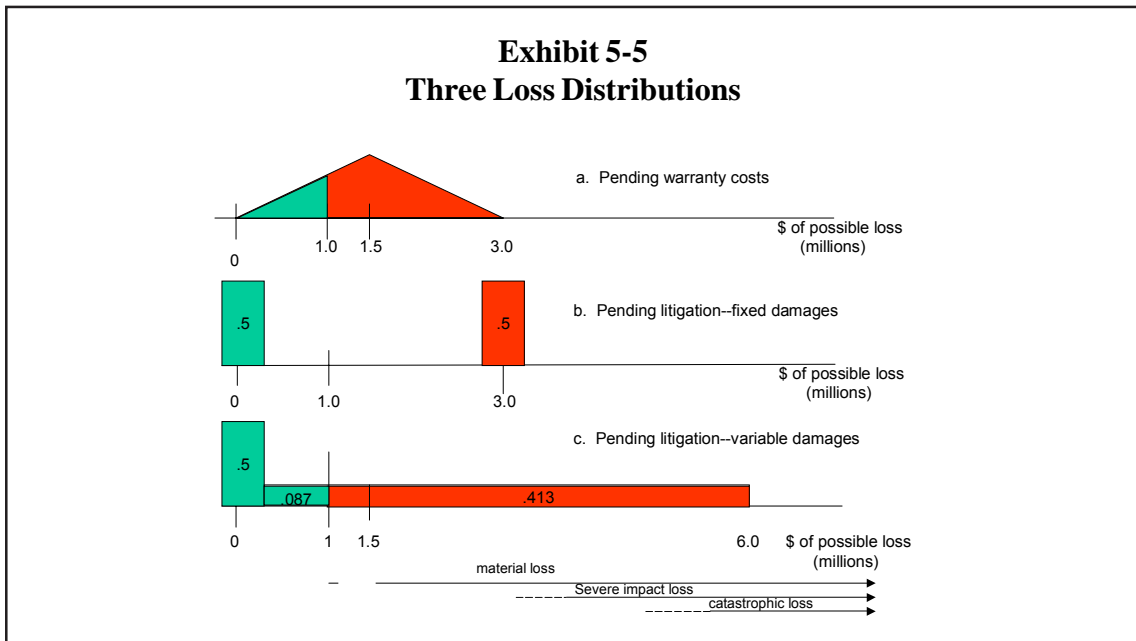
Risks of events are often not quantifiable in objective terms such as numerical probabilities. To deal with this difficulty, subjective probability phrases are used to characterize ranges of

probabilities. For example, the FASB in SFAS No. 5 defines an event as “probable” if it is “likely” to occur, and “reasonably possible” if it is more than remote but less than likely. Unfortunately, the terms have different meanings in different contexts and in the same contexts across different parties.

Surveys of auditors, investors, bankers, and managers have determined broad borderlines for the phrases in terms of probabilities. These parties typically view the borderline between remote and reasonably possible as about .2, and the borderline between reasonably possible and probably as about .7, with considerable variation around these borders across individuals and contexts (Amer, Hackenbrack, and Nelson, 1995). Auditors as a group tend to view the threshold values lower than do managers, with financial statement users in between the two.

Three Loss Distribution Examples

Exhibit 5-5 shows some loss possibilities under three probability distributions. All three distributions have an expected cost equal to \$1.5 million. In case A, which might represent the future warranty expense distribution, the point estimate of expense is \$1.5 million, with a triangular distribution of possible values around the best estimate and well over half the distribution to the right of \$1 million — an important or “material” amount.



Kinney, W.R., *Information Quality Assurance and Internal Control for Management Decisions* (Boston: Irwin McGraw-Hill, 2000). Reproduced with permission of The McGraw-Hill Companies.

Cases B and C, which might describe pending litigation, each have .5 probability of zero loss, but different positive loss probabilities. In case B, zero loss is as likely as a loss of \$3 million, with no other possibilities. For case C, a zero loss has a .5 probability, and losses of \$1 through \$6 million are possible and equally likely. While cases A, B, and C have equal expected losses, they differ as to the maximum possible loss and the likelihood of a loss greater than or equal to \$1 million. Case A has the highest probability that the loss will equal or exceed \$1 million, but the lowest probability that it might have a severe or catastrophic impact on the operation of the entity. If \$1 million is the smallest “material” amount, then case C has the highest probability of immaterial loss, but also has substantial risk of possibly catastrophic impact on the operations.

How would you evaluate these risks? Case A is almost certain to result in some loss, while cases B and C are “as likely as not” to have zero loss. For cases B and C, the likelihood of at least a material (\$1 million) loss is more than “remote,” but less than “probable” in each case. While management facing case C might argue that the .413 probability of a loss equaling or exceeding \$1 million is remote, others might believe it to be important because there is a .25 probability of a loss of \$1 million to \$6 million. The latter might be considered a “severe impact” or even “catastrophic impact” loss. The reasonable possibility of catastrophic impact loss would be important when evaluating risk and risk disclosure under the AICPA’s SOP No. 94-6 (adapted from Kinney, 2000, pp. 235-238).

Another risk assessment problem is possible biases of the risk evaluator. In particular, bias may arise because of differences in background and training of the evaluator, and from the position that the evaluator holds. For example, experts may be better at assessing risks than are novices or those not trained in risk. Also, an employee may consider a particular event likelihood (or loss magnitude) related to his or her area of responsibility to be low because a high assessment may imply poor performance of the employee. A supervisor or the IAF may view the same risk as much higher.

An important set of research questions for ERM is the effect of behavioral biases identified in other areas of research apply to risk assessments and auditing of risk assessments. As examples, prior research in accounting has identified biases such as “anchoring and adjustment,” “output interference,” “recency,” and others (see Shrand and Elliott, 1998, pp. 277-278, for examples of behavioral biases affecting financial judgments).

Research Questions

1. How should risk assessments be expressed (e.g., probability density functions, Low-Medium-High, narratives, subjective probability phrases vs. objective measures, expected value vs. maximum loss, univariate vs. multivariate or configural, discrete vs. continuous)?
2. How do behavioral biases affect risk assessments by employees vs. managers vs. directors vs. IAF?
3. Are there behavioral biases (such as “anchoring and adjustments,” “output interference,” and “recency”) affect IAF’s audit of risk assessments by others vis à vis vs. independent origination of assessments by IAF?
4. What should be the standards for risk assessments that are “decision influencing” vs. “decision facilitating” (i.e., *ex ante* vs. *ex post*)?

Risk Response (Risk/Reward Trade-off)

For each potentially important risk identified and assessed, the risks versus reward trade-off is evaluated. ERM response partitions risks into three risk/return categories. Some risks are of a magnitude and probability that the risk/reward relation is acceptable at its present level. These risks are simply accepted. Other risks are of such large magnitude or probability that they are unacceptable and cannot be economically contained, thus exceeding the entity’s risk appetite. These risks must be eliminated by avoiding exposure to risk through abandoning the project, or by preventing risk at the source (e.g., adopt nonpolluting technology, or filter out pollutants at point of production).

Still other risks, probably most risks, *may* have acceptable risk return/reward trade-offs, but not without some actions by management. Some risks may be transferred to others through insurance, hedging, or derivatives, or shared via joint ventures, alliances, and pricing (i.e., charging customers for the risks assumed by the firm). Risk transfer and sharing does not eliminate risk, but reduces it by changing its form. For example, a variable for fixed interest rate swap based on the London Interbank Offered Rate (LIBOR) allows a firm to exchange interest payments from a variable rate loan with fixed payments of another party holding a fixed interest loan, thus eliminating variable interest rate risk. However, the arrangement introduces a counter-party risk that the other party will fail to fulfill its contract.

Control activities (see next section) may limit these risks such that an unacceptable “inherent risk” (risk before control activities are applied) is transformed into a “residual risk” (after application of control activities) that is acceptable. Similar risks exist in varying degrees for insurance, hedging, joint ventures, and alliances. Each of these exposures creates a potential demand for assurance about the ability of the counter-party to fulfill its obligations.

Research Questions

1. How can IAF monitor the performance of risk responses (i.e., assess the reasonableness of response)?
2. How should IAF evaluate counter-party risk in monitoring risk response?
3. How can (should) risk response be linked to the risk appetite of the entity?
4. Can auditors obtain the skills necessary to evaluate responses to risk such as hedging, insurance, and derivatives? If so, how? (See Chapter 6 of this monograph.)

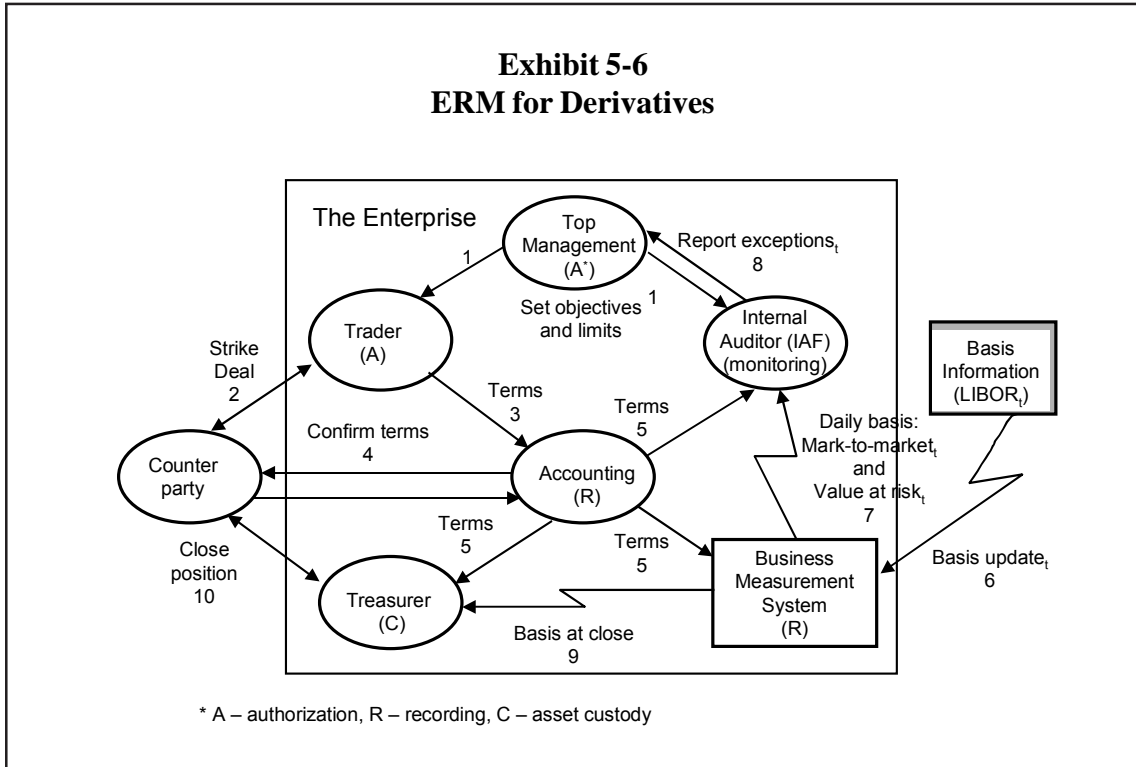
Control Activities

Many risks may be mitigated by the design of business processes that limit or otherwise reduce the likelihood or magnitude of risks faced. Many of the internal control procedures or control activities for control of transactions and asset protection are examples of business risk control activities. Some activities are themselves complex and require technical expertise in risk and risk management.

Derivatives are a widely used mechanism for managing some types of risk. Derivatives have also led to multimillion-dollar losses and even failure of large commercial and financial institutions. The next example shows how separation of traditional control activities can be used to mitigate risk for a derivative based on an interest rate swap.

A Derivatives Control Activities Example

Exhibit 5-6 shows five parties within the firm, the outside (counter) party with whom interest payments are exchanged, and the underlying basis information and the value of the London Interbank Offered Rate of Interest (LIBOR) that fluctuates over time. Top management sets objectives for derivatives using the swap and sets limits on risk exposure (operationalizing “risk appetite”). These objectives and limits (part of the environment) are communicated to the trader (in the finance department) authorized to negotiate derivatives and to IAF that monitors performance of the process (see arrows labeled 1 in Exhibit 5-6).



Kinney, W.R., *Information Quality Assurance and Internal Control for Management Decisions* (Boston: Irwin McGraw-Hill, 2000). Reproduced with permission of The McGraw-Hill Companies.

The trader negotiates terms of the swap with an outside counter-party (arrow 2), and communicates terms of the transaction (information and communication) to accounting personnel (arrow 3), who independently confirm terms (ongoing monitoring) with the counter-party (arrow 4). Accounting then records the terms and thus informs the treasury department, the internal auditor, and the business measurement system will then obtain access to LIBOR and calculate the value of the derivative position and the value at risk on a daily basis (arrow 6).⁶

IAF monitors the derivative portfolio position by comparing its measured value against the objectives and limits set by top management (arrow 7). If the limits are exceeded, the IAF reports the breach to top management for a decision about follow-up actions (arrow 8). When the swap position comes due or is to be closed, treasury department personnel (cash custody) calculate the settlement amount and transfer or receive cash to settle the position (arrows 9 and 10).

Information technology and complex calculations are used to measure the value and value at risk of derivative financial instruments. However, the control activities still apply and allow control. Specifically separation of authorization for objectives and limits from authorization for day-to-day-trades, and independent confirmation and recording of transaction terms, independent measurement for monitoring, and settlement allow management of risk and protection of company assets (adapted from Kinney, 2000, pp. 104-106).

Research Questions

1. How can traditional auditing procedures for control activity compliance and substantive tests (analytical and details) be adapted for monitoring risk control activities?
2. How can information technology be used to assist IAF monitoring of risk control activities?
3. How can internal auditors become sufficiently knowledgeable to audit the efficacy of responses to complex derivatives and joint outcome possibilities?
4. To what extent can (or should) IAF rely on outside experts to evaluate controls over risk?

Information and Communication

Several parties within an enterprise create demand for relevant and reliable information about risk assessments and risk management processes. Management wants to inform itself and to be able to credibly inform others that management is carrying out its fiduciary and legal responsibilities. Management also wants workers to be appropriately informed about risks that workers face and to inform management about exceptions noted in day-to-day operations. Audit committees and outside directors exercising oversight responsibilities would be comforted by assurance that risks are being managed adequately and could use IAF's assurance reports as evidence that they have carried out their oversight responsibilities.

Information about risk can be displayed within the organization using information technology and periodic internal reports. But how can management and directors be assured that risk and risk process information is being effectively communicated? Communication effectiveness also requires understanding of what displays mean regarding the possible internal and external environments as well as what the information implies for the enterprise's business processes and strategy.

The IAF can verify that displays are accurate and timely and are made available to the proper parties. In evaluating users' understanding (communication effectiveness), the IAF may need to review educational programs for employees as well as evaluate techniques for display of risk information. As an example of interpreting what risk displays mean, the IAF may need to use experts to test employees' comprehension of risk reports and consider conducting research to determine the most effective form of display such as graphs, probability phrases, odds, or outcome trees.

In addition to those with direct responsibility for design and implementation of ERM, others also have an interest in being informed about risk and risk management. Suppliers, customers, and workers would like assurance about entity risk and risk management processes because of the effects on their future welfare in dealing with the entity. Also, investors and creditors, prospective investors, and regulators charged with regulating businesses would like such assurance as a means of reducing information surprise and asset loss.

All of the parties above have an interest in risk and risk mitigation processes and want to be assured that a high quality risk management is in place. However, they differ in their demand for details because they differ in their abilities to act upon knowledge of particular risk exposures. Thus, reports on risk assessment and risk management take on different meanings for different groups, and require consideration of trade-offs. Because the IAF is part of the entity, attestation by the IAF has limited value in reporting on ERM to outsiders. However, an effective IAF is an integral part of management's assertion to outsiders that it has effective ERM. Also because the internal auditor is part of the entity, the IAF faces potential barriers in reporting on performance of top management to independent directors of the enterprise. The basic issue is the efficacy of communication that is essentially reporting poor performance by one's own boss.

Communication of risk and risk assessments are also somewhat more difficult because of several barriers. These include the lack of (a) adequate criteria for measuring risk assessment and risk management quality, (b) adequate criteria from separating bad risk assessments and processes from bad decisions and bad outcomes, (c) adequate methods for auditing risks and processes, and (d) a reporting regime to accommodate differing users and uses while protecting the interests of management, the entity as a whole, and the internal auditor. Some of the communication barriers can be overcome with improved procedures for auditing risk as described in this chapter. Also, some barriers can be overcome with differentiated reporting (Kinney, 2000). Other barriers remain, however.

Research Questions

1. To whom should particular risk or risk process information be communicated — management, other personnel, audit committee, board of directors, regulators, trading partners, outsiders?
2. When is information about processes (rather than risk measurements) sufficient (or preferred) communication?
3. How should risk assessments be presented to maximize understanding — probabilities, subjective phrases, graphs, integrate with financial reporting?
4. Can the IAF reliably communicate management failure to manage risk to independent directors?
5. Under what conditions can IAF monitoring and ERM attestation have value to those outside the enterprise?
6. What liability do directors, management, and IAF face with respect to risk audits and reports?

Monitoring Risk

The last component in ERM is continued monitoring for unexpected conditions and changes in conditions. We've discussed several risks auditing procedures at each prior step and won't repeat them here. We will consider an integrative analytical tool (decomposition) that has considerable power in risk monitoring and is well suited to application by management accountants in risk assessment and by the IAF in monitoring risk. Finally, we will explore whether the focus of ERM and the IAF's efforts should be risk assessments or the *process* that generates risk assessments.

Comparison of recorded performance from the business measurement system with expected performance via plans and budgets, and contemporaneous performance of competitors is a powerful way of monitoring for changes in the risk environment. Differences from expectations can be explained as to cause, or "sourced," and may point to changed environmental or business process conditions outside the limits suggested by prior risk analyses. Relevant timely measurements and decomposition as to cause allow timely reaction by management.

Monitoring for changes in risks already identified can also lead to sensing new risks and changes in the risk environment. Companies that are dealing with present risks adequately may be unprepared to deal with an environmental change that presents new risks that may threaten the continued existence of the firm.⁷

One way to monitor ERM performance is by comparing end-of-period operating data with that planned at the beginning of the period. LJ Appliances, Inc. illustrates this decomposition to assess risk management performance.

A Decomposition Example: LJ Appliances, Inc.

LJ Appliances, Inc. operates a chain of appliance stores throughout the Midwest. Its strategy is to be the lowest cost source of refrigerators to final consumers, a strategy that management believes should yield a 10 percent market share. Based on information available at the start of the first quarter of 2000, LJ Appliances' sales management planned to sell 10,000 refrigerators chain-wide. The plan was based on an aggregate demand forecast of 100,000 refrigerators for LJ's trade area and a target market share of 10 percent. Their planning model was simply aggregate demand times .1.

Recorded sales units for the first quarter were 9,650, for an aggregate difference between planned and recorded performance of 350. LJ's internal auditor's investigation of the difference revealed the following:

- A tornado destroyed LJ's Tulsa store, resulting in the loss of 250 planned sales.
- Aggregate demand of refrigerators in LJ's trade area was 5 percent higher than the amount predicted at the start of the first quarter.
- A new competitor takes refrigerator orders via the World Wide Web and ships from a central warehouse in Des Moines. The company was unknown prior to the start of the quarter, but is estimated to have sold 4,200 units (a 4 percent market share) in LJ's trade area during the quarter.

There are many ways to decompose these conditions. LJ’s internal auditor prepared the following summary:

Planned unit sales as of start of quarter (100,000 x .1)	10,000
Information error ((105,000 – 100,000) x .1)	500
Strategy assumption error (unanticipated competitor type) (105,000 x .04)	-420
Chance event (Tulsa tornado)	<u>-250</u>
Revised planned unit sales	9,830
Recorded unit sales for quarter	<u>9,650</u>
Unexplained difference	-180

Based on this decomposition, LJ’s management could decide what it meant for performance evaluation in operations, planning, and information sources.

Here are the results.

- Management decided that since information about aggregate demand was off by only 5 percent, it was not cost-effective to try to improve the aggregate prediction process.
- Except for the new competitor and the tornado, LJ achieved about a 10 percent market share, so the business model seemed acceptable.
- Tornadoes and other natural disasters occur with some regularity worldwide but are not predictable as to locality or timing. The Tulsa tornado was judged unlikely to affect planning of future sales, although it did cause management to consider whether insurance was needed to mitigate the hazard risk.
- The presence of a new type of competitor had a small impact the first quarter, but might have a large impact in the future. Further analysis showed that the new

competitor's sales came disproportionately from LJ's — possibly as many as 840 sales units were lost by LJ. Reconsideration of LJ's strategy was appropriate. It decided that it must either enter the Web-based market or change its expectations and prediction model by lowering LJ's planned market share.

- The unexplained difference of -180 units could be due to error in implementing the first quarter plan, error in measuring units sold, or a large number of other causes. Given the relatively small effect of these unexplained causes in the aggregate and the cost of further investigation as to cause(s), LJ management decided to ignore them for this period and in planning for the future.
(Adapted from Kinney, 2000, pp. 28-29)

In the LJ Appliances example, we see that decomposing historical differences from expectations can be used to evaluate performance and the risks of environmental change, as well as the risk of accounting errors and fraud. In particular, decomposition allows insight into the causes of any deviations and suggests follow-up actions. Decomposition may allow isolation of differences as measurement error in recording, chance events, implementation error (plans misunderstood or carelessly implemented by employees), poor information for planning, and a flawed business model. It may also suggest that long-term strategy needs alteration.

As to reporting IAF risk monitoring results, there are inherent difficulties in measuring and communicating risk information. When top management is the recipient of the IAF report, risk monitoring by the IAF is otherwise essentially similar to other internal auditing. However, when the performance of top management regarding ERM is ineffective, the internal auditor may face exceptional difficulties in communicating this finding to the independent directors. Part of the difficulty is due to the subjective and complex nature of risk — it is hard to be sure about risk mismanagement. Another part is the inherent dependence of risk conclusions on the parameters set by management, including the choice of strategies. In a sense, the internal auditor must “second guess” the wisdom of strategies and enterprise risk appetite choices in deciding whether ERM performance by top management is poor enough to warrant reporting. The uncertainties and hazards faced may make it impracticable for the IAF to communicate top management's failure at enterprise risk management.

Finally, it is useful to consider two issues that transcend ERM components. One is the ERM role of IAF in smaller organizations. In particular, for organizations that are too small to employ a chief risk officer (CRO), the internal auditor may, by default, serve as the CRO. In some ways, this may be a good choice for the organization. The internal auditor has broad experience in business and the risks that a business faces. On the other hand, the internal

auditor has other duties that may make timely risk assessment hazardous. Also, the internal auditor may be unable to function as CRO in identifying, assessing, and responding to risk, and perform the monitoring of ERM for the same organization. The extent to which one can reasonably review one's risk assessments may be more hazardous than auditing accounting records that one has prepared.

The other issue that transcends ERM components is whether the focus of IAF should be on risk assessments or the process that generates risk assessments. For example, should the IAF audit particular risk assessments as of a point in time or audit the risk assessment process? The question is parallel to whether one should audit the temperature of the nuclear power reactor in Springfield, or whether the dials on the control room panels are able to display the temperature in real time, across time. The answer is probably — both. Some *ad hoc* risk assessments are sufficiently important at a particular point in time that management would like to have assurance about the particular assessment as of a particular time. Other recurring risks are sufficiently important on a continuing basis that management would like to have assurance that the risk measurement system will capture and promptly display risk information in real time.

A related question is the degree of comfort that can be taken by recipients of IAF monitoring reports. Again, the answer is mixed. Process information may give comfort because the recipient has assurance that a valid measurement process is in place on a continuing basis — and the particular display doesn't need auditing because of confidence in the process. Likewise, when the potential impact of occasional risk events warrants the effort, assurance about the magnitude and likelihood of the risk can provide comfort that is cost effective.

On balance, then, the role and allocation of IAF monitoring effort remains an open question and one that requires further experience, thought, and research.

Research Questions

1. When auditing ERM performance, how can IAF decompose *bad risk assessment* from *bad information*, *bad decisions*, and *bad outcomes*?
2. How can directors evaluate IAF performance in risk assessment and risk auditing?
3. How best to *audit* risk assessments or risk assess processes — i.e., what approach or procedures and what skills should IAF possess? (See Chapter 6 of this monograph.)

4. What are the comparative advantages of IAF for risk assessment (systematic exams, reporting skills, independence, broad experiences, and skills)?
5. How does entity size change the role of IAF (e.g., risk assessment vs. risk audits)?
6. Should IFA report on risks *per se* vs. risk management process?
7. What does a risk process report imply about risk assessments at a particular point in time?
8. What are the limits on IAF for monitoring in ERM, and how do the designated roles and responsibilities of management and the board of directors affect these limits?
9. What adds value to risk services by IAF (measurement/completeness/process assurance/second look/objectivity)?

V. Conclusion

The engagement risk management approach outlined in COSO (2000) generalizes the COSO approach to internal control for risk. The seven components of ERM provide a conceptual framework for addressing threats to an organization achieving its stated objectives. ERM holds considerable promise as a systematic way of addressing risk management.

The role of the internal audit function as envisioned by ERM holds great potential for valuable service by internal auditors. In this chapter, we have attempted to address some of the questions about the ability of internal auditors to fulfill this role. The questions have purposely been left at a fairly general level so that the reader must think creatively about how to address the basic issues. In a new and exciting area such as risk and risk management processes, creativity in developing new and broad-based solutions should be encouraged.

VI. Appendix I: Chapter Research Questions

The Environment

- How can (should) management and the IAF systematically link entity strategies and business models to risks that threaten their achievement?
- Should risk measures be formally incorporated into planning performance measurement and compensation? If so, how?
- How do managers (directors and employees) interpret risk (and audit risk) reports?
- Can risk templates help management and IAF develop an appropriate risk environment? If so, for which elements?
- How does outsourcing of various functions change the risk environment and expose the entity to new risks?

Event Identification

- How does the inherent unobservability of second moment (variance or risk) vs. first moment (total or mean) affect risk assessments and how they are interpreted by management, personnel, and directors?
- Can brainstorming and scenario building be used systematically to assist in identification of relevant risks for entities? If so, how should they be conducted?
- How should covariation or joint occurrence of risk events be incorporated into risk assessments (e.g., conditional probability vs. joint probability)?
- Do risk event identification techniques differ between hazard, operations, financial, strategy, and other risks?
- How can IAF systematically audit completeness of risks of various types?
- How can outsourcing risks be identified and measured?
- Do risk templates that suggest consideration of specific types of risk limit IAF creativity in assessing completeness of risks (i.e., reduce “output interference”)?

Risk Assessment

- How should risk assessments be expressed (e.g., probability density functions, Lo-Med-Hi, narratives, subjective probability phrases vs. objective measures, expected value vs. maximum loss, univariate vs. multivariate or configural, discrete vs. continuous)?
- How do behavioral biases affect risk assessments by employees vs. managers vs. directors vs. IAF?
- Are there behavioral biases (such as “anchoring and adjustments,” “output interference,” and “recency”) that affect IAF’s audit of risk assessments by others vis à vis vs. independent origination of assessments by IAF?
- What should be the standards for risk assessments that are “decision influencing” vs. “decision facilitating” (i.e., *ex ante* vs. *ex post*)?

Response

- How can IAF monitor the performance of risk responses (i.e., assess the reasonableness of response)?
- How should IAF evaluate counter-party risk in monitoring risk response?
- How can (should) risk response be linked to the risk appetite of the entity?
- Can auditors obtain the skills necessary to evaluate responses to risk such as hedging, insurance, and derivatives? If so, how? (See Chapter 6 of this monograph).

Control Activities

- How can traditional auditing procedures for control activity compliance and substantive tests (analytical and details) be adapted for monitoring risk control activities?
- How can information technology be used to assist IAF monitoring of risk control activities?

- How can internal auditors become sufficiently knowledgeable to audit the efficacy of responses to complex derivatives and joint outcome possibilities?
- To what extent can (or should) IAF rely on outside experts to evaluate controls over risk?

Information and Communication

- To whom should particular risk or risk process information be communicated — management, other personnel, audit committee, board of directors, regulators, trading partners, outsiders?
- When is information about processes (rather than risk measurements) sufficient (or preferred) communication?
- How should risk assessments be presented to maximize understanding — probabilities, subjective phrases, graphs, integrate with financial reporting?
- Can the IAF reliably communicate management failure to manage risk to independent directors?
- What liability do directors, management, and IAF face with respect to risk audits and reports?

Monitoring

- When auditing ERM performance, how can IAF decompose *bad risk assessment* from *bad information*, *bad decisions*, and *bad outcomes*?
- How can directors evaluate IAF performance in risk assessment and risk auditing?
- How best to *audit* risk assessments or risk assess processes — i.e., what approach or procedures and what skills should IAF possess? (See Chapter 6 of this monograph.)
- What are the comparative advantages of IAF for risk assessment (systematic exams, reporting skills, independence, broad experiences, and skills)?
- How does entity size change the role of IAF (e.g., risk assessment vs. risk audits)?

- Should IFA report on risks *per se* vs. risk management process?
- What does a risk process report imply about risk assessments at a particular point in time?
- What are the limits on IAF for monitoring in ERM?
- What adds value to risk services by IAF (measurement/completeness/process assurance/second look/objectivity)?

Footnotes

¹Internal control examination and reporting requirements and experiences differ around the world (see Miccolis, 2000, and Harrington, 2002a).

²Others are Miccolis et al., 2000, and Armour, 2000.

³Adapted from EIU, *Managing Business Risk*, pp. 87-91.

⁴According to COSO (2002:8), “ERM expands and elaborates on those elements of internal control relevant to enterprise risk management.”

⁵For discussion of the relation of business models and processes to strategy and objectives, see Magretta, 2002.

⁶Daily calculation of value of position and value at risk may not be needed for a simple swap, but the valuation of a portfolio of derivatives, hedges, and positions taken can be complex and warrant daily measurement and monitoring.

⁷Two subtle but pervasive risks are the risks of failure to maintain the organization’s capacity to identify and exploit opportunities (Criteria of Control (CoCo), CICA, 1995, para. 7), and risk of failure to maintain the organization’s resilience or capacity to respond and adapt to unexpected risks and opportunities.

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CHAPTER 6
MANAGING THE INTERNAL
AUDIT FUNCTION

Douglas F. Prawitt

Disclosure

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I. Introduction

This chapter discusses staffing and managing the internal audit function (IAF) as a component of organizational governance, and has two main purposes. First, it familiarizes interested practitioners and researchers with current trends and issues in staffing and managing the IAF. Second, it suggests questions and topics for future thinking and research among practitioners and academics. Managing and staffing an IAF is a vast and complex undertaking that remains relatively unexplored by rigorous research. The chapter contains several citations to practitioner information and academic research, but it does not attempt to include a comprehensive literature review of all relevant articles or research. Rather, it is intended that interested readers use the references as a starting point in accessing other relevant information. Much of the research cited is found in other disciplines or in the external audit domain. While the external audit environment can usefully serve as a starting point in generating researchable ideas in internal auditing, the researcher must carefully take into account the sometimes subtle differences between the institutional and environmental features of internal and external auditing. In fact, if viewed appropriately, these differences offer fertile ground for the generation of promising research questions.

The organizing framework for the chapter is adapted from a widely accepted, fundamental model of management (DuBrin, 1999, Dessler, 2000, and Griffen, 2002). The primary components of that fundamental management model, and of this chapter, are planning, organizing, staffing, leading, and controlling.

The planning section of this chapter discusses the issues involved in planning at the organizational and individual engagement levels. The organizing section looks at organizing the IAF at a company-wide level and then continues by analyzing the use of internal audit teams and the common practice of using the IAF as a management training ground. Staffing the IAF is a significant part of the chapter. This section discusses the hiring, training, and staffing of internal auditors as well as the use of task structure to make effective staff assignments. It also analyzes compensation and retention strategies of the IAF. The leading section discusses leadership and motivation issues. Finally, the controlling section discusses the importance of ensuring the IAF is adding value to the organization.

II. Planning

Internal Audit Planning at the Organizational Level

Whether the IAF is in-house or outsourced, the IAF should develop an understanding of the risks that may prevent the organization from achieving its objectives. Based on this

understanding, the IAF should then plan its work to help measure and mitigate those risks. These responsibilities come as a natural result of the IAF's role as an agent employed to help ensure that the organization accomplishes established objectives. However, the internal auditor's role is unique because the internal auditor is an agent that monitors the actions of another agent (management), both of whom are employed by the same principal¹ (Adams, 1994).

Internal auditing standards indicate that “the chief audit executive should establish risk-based plans to determine the priorities of the internal audit activity, consistent with the organization's goals” (*Standard 2010*). During the process of determining, monitoring, and mitigating the organization's risks, the IAF may provide assurance or consulting services. Kinney outlines the process of risk assessment and risk management in Chapter 5.

Traditionally, internal auditors have identified and assessed organizational objectives and risks informally. However, there is an emerging trend for internal auditors to become more deeply and actively involved in organizational risk management. As they become involved in risk management it is essential that they obtain management and board input and feedback. For instance, some auditors conduct one to two-day seminars together with key management personnel. During this session, the participants attempt to determine key business drivers and objectives, and the obstacles that may prevent management from utilizing these drivers and accomplishing their objectives. Armed with this knowledge, internal audit leaders can establish an internal audit plan that addresses the organization's needs (Homer and Holdren, 2001). Techniques such as these seminars, which capture the real-time needs of the organization, help the IAF fulfill its corporate governance responsibilities. Seminars and other techniques (interviews, surveys, etc.) are often conducted on a predetermined time schedule that allows auditors to continuously align the internal audit plan with the organization's objectives (LaTorre, 2002). Other auditors establish risk databases that catalog products and processes along with their associated risks, and some IAFs even use complex algorithms to identify and calculate the organization's level of risk (Leithhead and McNamee, 2000).

One important area that internal auditors may be called upon to assess and improve is the “tone at the top.” Tone at the top is a basic component of the COSO Internal Control framework and its importance has been highlighted by recent high profile business failures and frauds perpetrated by top management. Boards can enlist the help of the IAF to ensure that the tone at the top is appropriate and effectively communicated to all levels of the organization (PricewaterhouseCoopers, 2002).

Once the organization's risks have been identified, internal auditors and management can also work together to develop, evaluate, and improve internal controls to mitigate exposure

to risk. Control self-assessment (CSA) is a tool internal auditors use to involve management and other employees in these processes. CSA requires internal auditors to become audit facilitators by helping employees identify and monitor control areas that are important in ensuring that business objectives are met (Morris, 2001). While internal auditors have traditionally focused on providing assurance services aimed at mitigating risk, they have increasingly begun to deliver a variety of consulting services that assist clients in developing solutions to mitigate risks. As internal auditors develop their skills in this area, related consulting services are becoming a significant component of internal audit work. This trend highlights the tension that may exist as internal auditors serve the board by assuring that risks are being identified and as they serve management by helping to develop procedures that mitigate these risks. This tension is discussed in detail in Chapter 4 of this report.

Academic Research

As indicated in many other sections of this chapter, external audit research provides researchers with a potential starting point in examining issues related to internal audit planning. Among many other planning issues examined in the external audit realm, researchers have attempted to determine how varying levels of inherent risk can affect auditors' risk assessment, generation of hypotheses, and justification of audit programs (Wright and Bedard, 2000). These issues are also found in internal auditing when identifying risks at the organizational and individual engagement level. (See subsequent section for a discussion of engagement planning.) Researchers should identify differences between the external and internal audit planning environments, tasks, etc., and explore these differences to identify relevant research topics in internal auditing.

Research Questions

- How do internal audit plans identify and attempt to mitigate organizational risks?
- In helping management identify organizational risks, what internal auditor characteristics, heuristics, and background lead to more effective risk assessment?
- External auditors are commonly emphasizing a top-down, broad-based view of risk assessment. How is the focus of internal auditors different from that of external auditors in identifying organizational risk? Are internal auditors better or worse at identifying organizational risk than external auditors? Why?
- What training techniques, if any, can help internal auditors gain the ability to effectively identify organizational risks?

- How does planning for IAFs that perform a significant amount of consulting work differ from planning for IAFs that perform primarily assurance work?
- How does the IAF/management relationship vary across countries and cultures?

Planning Individual Engagements

In addition to developing an organization-wide audit plan, “internal auditors should develop and record a plan for each engagement” (*Standard 2200*). The IIA’s *Standards for the Professional Practice of Internal Auditing (Standards)* also require that auditors consider the objective and scope of each engagement in developing the engagement plan.

In developing the engagement plan, auditors must ensure that the assurance/consulting engagement is designed to meet the objectives of the internal audit plan. If the internal audit engagement has been properly engineered, it will in turn contribute to ensuring that the organization’s risks have been identified and appropriately controlled. The engagement plan will vary across engagements, but similarities will likely exist among similar types of engagements, such as financial audit engagements, operational audit engagements, and consulting engagements. Researchers can analyze the components that make these different engagement plans effective.

In order to improve the likelihood of a successful engagement, internal auditors can obtain management’s cooperation early in the planning process by emphasizing that their purpose is to assist management in adding value to their divisions or departments and by asking the managers to sign off on planning documents prior to beginning the engagement or service (Hubbard, 2000). Additionally, internal auditors can conduct preliminary engagement planning several months in advance of the actual assurance or consulting work. Lemon and Tatum include a discussion in their chapter addressing the importance of effective planning in internal audit engagements.

Another important part of planning the engagement is assigning knowledgeable auditors with relevant experience to each engagement. Experienced, knowledgeable auditors are more likely to gain the confidence of the employees whose area they audit. IA managers must also comply with the *Standards* by assigning auditors who can act independently and objectively. Effective staffing for a particular engagement may require the IAF to outsource personnel from professional services firms who possess the skills needed to complete an engagement. Additionally, the IAF can bring in people from within the organization, but outside the internal audit department — a practice known as “insourcing.” Insourcing and outsourcing should be planned well in advance and may be particularly relevant for

engagements that require auditors to possess technological or otherwise specialized knowledge and skills (Hubbard, 2000). While staffing is an important part of planning the engagement, the staffing section of this chapter will further discuss the importance of appropriate staffing assignments.

Engagement plans should also include an estimate of the cost of the engagement, specific requirements for the number of auditors needed, and the skills these auditors should possess. The plans should then contain a detailed schedule of how long the engagement will last and how the results of the engagement will be reported. Some engagements are designed to provide explicit assurance while others provide implicit assurance.

Academic Research

Research has been conducted in the external audit environment to evaluate auditors' planning activities, such as auditors' assessments of inherent and control risk and the use of analytical procedures (Waller, 1993, and Biggs et al., 1995). Additionally, researchers have attempted to determine the returns to planning. For instance, Davidson and Gist (1996) document that planning reduces "total audit effort" to a certain extent, but at some point planning actually increases total audit hours. Researchers can extend this work by identifying unique aspects of planning in internal audit settings and assessing the extent to which theories and findings from the external audit environment apply to internal audit. Researchers can also extend the work of previous research that analyzes the interactions between internal and external auditors in planning (Krishnamoorthy, 2002).

Research Questions

- What characteristics of engagement planning (e.g., timing, people involved, scope, etc.) improve the effectiveness of internal audit engagements? How do these characteristics vary among financial audits, operational audits, and consulting engagements?
- What are the returns to planning internal audit engagements? How do these returns compare to those documented in the external audit setting?
- What are the cost drivers of an internal audit engagement? Can knowledge of these drivers be used to help practitioners accurately estimate the cost of an engagement?
- How is engagement planning different for assurance versus consulting engagements? (See Chapter 4 of this monograph.)

- Does obtaining participation and buy-in during the planning phase affect client attitudes, cooperation, and audit effectiveness?
- What is the optimal engagement length? Does this differ among organizations and industries? (Anderson et al., 1994)
- What auditor characteristics improve the auditor's ability to identify relevant engagement risks?

III. Organizing

The Structure of the IAF

The structure of the IAF varies widely in practice. For example, some IAFs have a chief audit executive (CAE) who is a member of senior management and who participates at the highest level of the parent organization, while other IAFs are managed as part of the organization's accounting or finance function. In some cases, the IAF is outsourced, co-sourced, or combined with other assurance functions (e.g., security, quality, compliance; see Roth, 2000). Combining the IAF with other functions may facilitate the *Standards'* directive to "share information and coordinate activities with other internal and external providers of relevant assurance and consulting services to ensure proper coverage and minimize duplication of efforts" (*Standard 2050*).

Once the IAF determines whether to outsource and the extent to which it will partner with other assurance functions within the organization, it must assign responsibility to individuals and groups. As mentioned, some organizations appoint a CAE to coordinate the work of the IAF and then report to a member of senior management, but this is not always the case. However, the *Standards* do require "the chief audit executive [to] report to a level within the organization that allows the internal audit activity to fulfill its responsibilities" (*Standard 1110*). The organizational level to which the CAE reports may be an indication of whose interests the CAE will ultimately serve.

In addition to determining which internal audit personnel lead the IAF and interacting with external decision-making parties, the IAF must also decide how it will assign responsibility within the function. This includes determining the appropriate span of control and the level of centralization in the IAF.

In the recent past, some IAFs experienced a period of restructuring by reducing management positions and flattening the organizational structure. These changes and others like it are designed to increase productivity, but they may cause concerns about opportunities for

promotion within the IAF (though this concern may be mitigated if IAF is used as a management training ground). Further, decentralizing decision-making within the organization may increase role ambiguity because employees can become confused about their responsibilities in new roles and relationships (Gray and Gray, 1996).

The size of the internal audit department heavily influences the structure of the IAF. Large IAFs are more likely to have a hierarchical management structure, with managers exercising control over specified internal auditors and audit teams. Auditors in larger organizations may have less autonomy, while auditors in smaller IAFs will likely complete a wider variety of tasks and participate in several types of engagements.

Academic Research

Organizational structure and its determinants have been discussed in the general management literature and, to a lesser extent, in the accounting research literature (Melumad et al., 1987). Researchers have also attempted to understand the motivation for and results of downsizing and corporate restructuring. For example, downsizing has been shown to affect employee morale, individual performance, and firm financial performance (Manson, 2000). These research implications may be relevant within an individual department such as the IAF. Role ambiguity and role conflict resulting from decentralization may create job stress and have a detrimental impact on morale and performance (Bamber et al., 1989).

Research Questions

- Does the presence of a CAE contribute to effective corporate governance? For example, do organizations with a CAE that reports to the board of directors experience less fraud, external audit failure, etc., than organizations with no CAE or a CAE that reports to management?
- Does combining IA with other assurance functions (security, quality control, etc.) facilitate communication and reduce redundancies? What are the other effects of such combinations?
- What is the optimal span of control for the IAF? How many managers should the IAF have, and how many auditors should they supervise?
- What type of structure facilitates communication in the internal audit function? For example, do IAFs with a CAE and several layers of management communicate more frequently with their employees, external auditors, and clients? What factors influence the quality of communication?

- Reduction in middle management may cut costs, but will it improve effectiveness and efficiency? For example, how will this reduction affect employee morale?
- How do IAFs that do not allow for growth within the function handle career advancement issues? How do these factors affect the types of people who are attracted?
- Does reducing middle management change the number and characteristics of people applying for positions within internal auditing? If a company reduces middle management, is the IAF more likely to serve as a training ground for company management?
- Is IAF size correlated with audit quality?
- Does the size of the IAF impact its reporting structure? For example, do large IAF functions typically have CAEs?
- How effective are the different approaches to organizing the IAF? Will the most effective structures be different in complex governance situations?
- Can agency theory provide insights that help explain the type of structure, as well as the size of, the IAF within different organizations? (Adams, 1994).

Audit Teams

A team is defined as an interdependent set of people that is part of another larger social system or organization and that has been organized to accomplish a particular purpose or set of purposes (Stewart et al., 1999). Teams have been shown to improve productivity and efficiency in some work settings, but not all. Multidisciplinary, self-directed teams are increasingly common in organizations today. A self-directed work team (SDWT) is a team that acts with a relatively great degree of autonomy by exercising control over such things as how the work is organized and completed, who performs which roles, and how performance is measured (Stewart et al., 1999). Self-directed teams also choose their leaders and sometimes even decide if the team will have a leader.

Although teams may fill individual social needs (Stewart et al., 1999), teams should be used and structured in ways that are effective in particular organizational settings. The IAF should adopt teams only if they improve the quality and efficiency of the audit work and thus must determine which settings and circumstances are appropriate for the use of teams. A critical

area of research in internal auditing is to identify those features of the work environment, task setting, and task that influence the effectiveness of different types of teams.

The nature of the teams currently used in internal auditing varies across organizations. While in some organizations individuals are allowed to self-select into teams, teams are typically assigned by an audit manager or by the CAE. These teams can be temporary or relatively permanent and vary in size depending on the needs of the engagement. Teams are responsible for the majority of the assurance work done in a typical internal audit setting. In most cases, the team is accountable to a manager or the CAE, who is responsible for ensuring that the team effectively fulfills its responsibilities. Though fairly rarely, some IAFs use self-directed teams. The implementation of self-directed teams may blur the lines of responsibility between managers and staff auditors and increase role stress and role conflict.

Academic Research

The development and use of teams in internal auditing brings with it a variety of research implications. Internal audit researchers can draw on the extensive research that has been done on the role of teams in organizational settings, mostly in the organizational behavior and human resources areas. Some of the issues that have been addressed in this research include the formation and operation of effective teams, power and politics in team settings, team interdependence, team decision-making and problem solving, team cohesiveness, team staffing, power and conflict in teams, etc., (Turner, 2001). Research has been done on the effects of diversity on top management teams (Jackson et al., 1995), but not much has been done on the effects of diversity on lower-level teams. This may prove to be an increasingly important topic for IAFs with the growth of multinational organizations, and as internal auditors come from diverse backgrounds with varying levels of experience and expertise.

Research on self-directed teams is abundant (Manz and Sims, 1987). The effects of task structure on team effectiveness have also been researched heavily. By identifying the unique characteristics of internal auditors, internal audit work environments, and internal audit tasks (including assurance vs. consulting), researchers can contribute to our understanding of how and when various team types can be effective in internal audit settings. Although research on teamwork generally employs field studies, experimental and even archival research in this area could prove productive.

Research Questions

- What characteristics of internal audit work make the use of teams effective? What are the characteristics of internal audit tasks that are more/less suited to teamwork?

- To ensure performance and efficiency, how should teams be selected in an internal audit setting (self-selection, skills matched with job, etc.) and how large should the team be for particular work environments, task settings, and tasks? How long should internal audit teams remain together for different types of tasks?
- Can a self-managed internal audit team effectively handle the management responsibilities that may have previously belonged to a single person?
- What practices help teams make effective decisions in an internal audit setting? What team member characteristics improve team decision-making abilities? How does the use of teams affect on-the-job training?
- How do self-directed teams manage the potential problem of “diffusion of responsibility”?
- How can the performance of internal audit teams be measured?
- Are the conclusions and opinions of an internal audit team seen as more credible, objective, and relevant than those of an individual internal auditor?

The IAF as a Management Training Ground

Some organizations have long used internal auditing as a management training ground. IAFs that act as a management training ground serve management by providing internal audit services and by preparing internal auditors to become effective managers. New recruits are placed in the IAF for a period of two to three years with the intention of preparing them to take entry-level management positions or other positions within the organization. The IAF is used as a management training ground because it gives employees a unique opportunity to see the resources and processes of the entire organization. This exposure helps internal auditors to understand the business as a whole (Barrier, 2001). Additionally, internal auditors are exposed to top executives and areas of the business that are generally not seen by other employees. Thus, internal audit experience is often seen as a “fast track” to desirable management positions in such organizations. For example, Ford Motor Company’s internal audit managers have sometimes recruited MBAs to the IAF by making it clear that they would be in the internal audit department for a relatively short period, and that experience in the IAF would give them the skills necessary to fill management positions later in their careers (Barrier, 2001). This practice may also be effective in attracting recruits that have highly sought-after technological skills that can be utilized by the IAF. This practice may in turn reduce the number of outside personnel the IAF relies on.

One CAE asserts that the management-training model directly influences the kinds of employees recruited into the IAF: "You're able to attract candidates who map better to current needs. They typically have a broader education as opposed to a strictly accounting/finance education. They have more experience, they seem to be more confident, and they seem to have better interviewing and facilitation skills and better interpersonal relationships. A different type of person is attracted to these new types of audit organizations" (Barrier, 2001). In many ways, the IAF makes a specific cultural choice in using the IAF as a training ground. Some organizations use the practice to improve morale and change the environment of the IAF. For instance, at Raychem the IAF is referred to as the Corporate Operations Review Group and auditors are business consultants. Raychem's IAF is "seen as a learning and developmental activity rather than as a career" (Stoner and Werner, 1995).

Using internal audit as a management training ground is also used to help retain top performers within the organization. This is accomplished by recruiting employees to work in the IAF who agree to stay within the company for a predetermined period of time after leaving the function. This approach is used at Wal-Mart Stores Inc. (Campbell, 2001). At Motorola, 85 percent of internal audit recruits remain with the company in other positions after leaving the IAF (Campbell, 2001).

The types of tasks assigned and training given may differ when the IAF is used as a management training ground. For example, to ensure that internal audit is preparing auditors to be managers, some IAFs provide training in soft skills such as leadership, public speaking, and communication skills.

Using the IAF as a management training ground is not without difficulties. High turnover within the function is an inherent part of using the IAF to prepare future managers. In fact, some observers question whether the lack of continuity within the internal audit staff may compromise audit quality. As a result, most functions keep a core group of auditors to provide a degree of stability. However, the IAF may face employee morale issues if core auditors are limited in their opportunities for growth while management trainees are consistently promoted to managerial positions. In addition to these concerns, internal auditors/management trainees may later become managers of departments they have audited, which may raise issues similar to those found in external auditing when clients hire former auditors.

Academic Research

Little research has been done on the use of the IAF as a management training ground. This practice is unique to internal auditing and provides researchers with an opportunity to make a significant contribution to our understanding of an important feature of the profession.

The research that has been done on the IAF as a management training ground is survey data, which is part of The IIA's biennial job market survey. Although the complete 2002 survey results are not available as of this writing, an article in the June 2002 issue of *Internal Auditor* highlighted a selected portion of them. Of the U.S. directors responding to the survey, 93.5 percent felt "that internal audit work provides experience that is of special value in management positions outside the audit group." Additionally, 44.6 percent of U.S. directors stated that management used the IAF as a training ground for future managers (Oxner and Kusel, 2002). This research is purely descriptive in nature, and makes no attempt to explain why this practice exists in some organizations but not others. However, it may provide a useful starting point for more rigorous research.

Research Questions

- Some IAFs act as a training ground for future managers, while others do not. This provides rich potential for comparisons across IAFs on several dimensions. For example, researchers can explore the effectiveness of using the IAF as a training ground both in terms of management preparation and IA effectiveness. At the broadest level, how does using the IAF as a management training ground affect organizational governance?
- Along what dimensions do management trainees and core auditors differ? Some examples may include personality variables, educational background, approaches to problem-solving, nature of relationships with auditees, and attitudes toward independence and objectivity. What types of employees make the best core group of auditors? What types of employees make the best management trainees?
- Teams may include both management trainees and core auditors. How effective are these teams in comparison to other teams?
- Does using the IAF as a management training ground improve recruiting? Why? For example, are higher quality recruits attracted to the IAF if it acts as a management training ground than if it does not?
- Is serving in the IAF an effective way to prepare management trainees to become managers? Why?
- How long should management trainees remain in the IAF?
- Does agency theory shed light on why some organizations use the IAF as a management training ground while others do not? What issues arise when agents

who are hired to monitor another agent (management) expect to be later funneled into management positions themselves?

- What are the organizational and IAF characteristics that can predict whether the IAF will be used as a management training ground?

IV. Staffing

Before hiring or beginning any type of internal audit staffing, the organization must determine its human capital strategy. Creating and defining this strategy guides the IAF in all of the staffing decisions it subsequently makes. PricewaterhouseCoopers, LLP has delineated four basic internal audit human capital models which are not necessarily mutually exclusive and which can be combined in a number of ways to create a human capital strategy (Anderson, 2001).

The first human capital model is the **experienced hire** career model. An IAF that utilizes this model focuses on hiring or “importing” experienced personnel from within or outside the organization. These functions want to ensure that they have auditors with specialized business knowledge and skills. Internal auditing is seen as a permanent career destination.

The **migration** model also focuses on ensuring that the IAF is staffed with individuals who possess skills that are proven to make the IAF a successful part of the organization. While this model is not designed to *automatically* move personnel from the IAF to management positions, the movement of successful internal auditors into other areas of the organization is seen as a positive sign of the IAF’s ability to add value to the organization.

On the other hand, the strategy implicit in the **consulting** model’s strategy is to recruit auditors into the IAF only to later move these individuals into other organizational functions. Under this model, the IAF consists of a group of consultant auditors and another group of core auditors. Consultants are internal auditors who expect to move to other areas of the organization upon gaining valuable experience within the IAF. Core auditors remain with the IAF for an indefinite period of time. This model employs the IAF as a management training ground.

Finally, IAFs that employ the **change agent** model view the IAF as an integral part of the organization’s human resource strategy. “Companies using this model selectively deploy talent through internal audit to create a pipeline of corporate change agents who flow continuously into business units. Here, the migration of talent to line businesses occurs as part of a formal corporate strategy to achieve this objective and is a primary performance metric for internal audit” (Anderson, 2001).

The IAF's choice of a human capital strategy, consisting at least partially of a combination of the above component models, will drive the staffing decisions it makes. For instance, an IAF that utilizes the consulting model will likely attract individuals with different characteristics than will an IAF that employs the migration model.

Hiring

Hiring qualified personnel is an essential part of effectively managing an IAF. Because of the wide variety of alternative human capital strategies, industry differences, and varying knowledge and experience requirements, internal audit practitioners take different approaches in hiring to meet organizational needs.

As mentioned above, some IAFs hire recent college graduates, while others take a different approach by hiring experienced business personnel. This latter approach is based on the assumption that in order to add value to the organization and to ensure that client needs are met, auditors with business experience should be brought in as new hires. These experienced business personnel may not have formal auditing, accounting, or financial skills, but the IAFs value the knowledge and expertise these employees bring with them. Other IAFs seek more experienced business people because of the candidates' ability to cope and deal with change. These new hires are believed to increase the level of sophistication within the IAF and set an example for other staff members who have difficulties making changes (Gray and Gray, 1996). Experienced business people can come from within or without the organization. The institutional knowledge insiders bring may give them an advantage over outsiders; however, outsiders may bring innovative ideas from other organizations (Gray and Gray, 1996). For instance, at Motorola a typical new hire has two to three years of industry or public accounting experience — she also usually has a CPA certification or an MBA degree (Stoner and Werner, 1995).

IAFs typically attempt to hire people who match the culture and needs of the organization. In doing so, the function must consider several factors, including the type of work it is engaged in (e.g., auditing v. consulting or both — see Chapter 4) and the organization's culture. Careful consideration of the demands placed on new hires by the nature of the audit and consulting tasks performed within the IAF may facilitate the hiring process (see section on task structure in this chapter). New hires must possess certain skills or have the aptitude to learn certain skills in order to be effective. This is particularly true in relation to technological skills that are becoming increasingly important in an internal audit setting. As the IAF becomes more complex and moves to providing consulting services for the organization, managers must continue to evaluate their human resource needs. For example, as the variety

and sophistication of internal audit services increase, hiring may shift increasingly toward more experienced business people (Stoner and Werner, 1995).

U.S. directors anticipate hiring over half (54.8 percent) of their new internal auditors from outside the IAF who have previous audit experience (Oxner and Kusel, 2002). This may reflect the trend in internal audit to hire more experienced personnel or it may be an indication that turnover has created demand beyond what recent college graduates can supply.

After determining what type of recruits the IAF wants to hire, the function must implement recruiting practices to attract desired candidates. It has been observed that some IAFs consistently hire the best available candidates while other IAFs struggle to attract qualified personnel and generally hire mediocre job candidates. IAFs that hire well-qualified candidates may have an attractive organizational culture or implement superior recruiting techniques. Little is currently known as to why some IAFs appear to be more successful than others in this regard.

Practitioners must also consider the size and growth rate of the pool of potential recruits. Educational requirements and other factors may limit the number of students choosing accounting as their field of study. Along these lines, both practitioners and researchers may find it interesting to explore the factors that influence students to consider a career in internal auditing.

Academic Research

The research on hiring and selection processes is extensive and covers issues such as personality predictors, interview methods, and performance criteria (Hough and Oswald, 2000). As an example, research has been done in general management settings to determine if experience is an important factor in hiring job applicants. Experienced recruits are evaluated more highly in most characteristics but new graduates have been shown to be more open minded and willing to learn (Rynes et al., 1997). Internal auditing provides an especially promising setting for research in this area because of the specialized skills and task sets that are required of internal auditors relative to general management settings.

Research Questions

- What characteristics of recent college graduates make them more or less effective as internal auditors? What about experienced business people? Other types of recruits?
- What internal auditor personality traits lead to better performance and less job stress?

- Evaluate the backgrounds of current internal auditors. What do they have degrees in? What are the individual and organizational determinants of these characteristics?
- How are training needs and costs affected by the types of candidates hired by the IAF? For example, will it cost more to train experienced business people who have little or no audit knowledge than recent college graduates with a background in accounting?
- Are some organizations more likely to hire a particular type of internal auditor? What are the characteristics of organizations and IAFs that help predict and explain hiring practices?
- What organizational characteristics attract qualified recruits? What are the characteristics of recruits hired by IAFs that act as a management training ground versus those hired by IAFs that are comprised of a core audit group?

Training

After the IAF hires appropriate personnel, these personnel must be adequately trained to perform the work. The *Standards* require auditors to “enhance their knowledge, skills, and other competencies through continuing professional development” (*Standard 1230*). Training is especially important as organizations implement new programs that are subsequently audited by the IAF. For example, in the late 1980s, American Standard instituted demand flow manufacturing based on just-in-time production systems. In order to prepare auditors to add value in auditing the organization’s various operating functions, auditors received in-depth training in process mapping, quality management tools, business process reengineering, and just-in-time manufacturing principles (Stoner and Werner, 1995). The company adjusted training programs based on organizational changes and needs.

In many large organizations, auditors participate in formal in-house training programs. These include classroom-based training, distance learning through the Internet and video conferencing, mentoring, on-the-job training, etc. In addition to these programs, some organizations cross-train auditors on the job so that they can become familiar with the entire organization. The advantages and disadvantages of such an approach have not been rigorously documented or examined.

Other companies take a more hands-off approach to training and allow employees to develop their own training programs and to seek training outside the organization. This is especially true in smaller IAFs. In addition to using outsourced training programs, IAFs sometimes encourage auditors to seek training from professional organizations like The IIA. If auditors

seek outside training, they are typically encouraged to ensure that the training meets organizational objectives and personal goals. Research can explore the alignment between organizational goals and training programs, and the various ways in which training programs are selected in various functions.

Mentoring is another tool that IAFs often use to develop and train employees. Mentoring will often take place on an informal basis as junior auditors seek advice from more experienced personnel. The internal audit function may consider setting up a formal mentoring program that pairs a junior and senior auditor together. The senior auditor can guide the junior in internal auditing work as well as show her “the ropes” of the organization (Ramamoorti et al., 1999).

Preparing employees to pass professional certification exams is another form of training. This can be done by the IAF itself, or, as mentioned above, auditors can go outside the organization to receive this training. Many IAFs encourage employees to obtain these certifications and reimburse employees for training and test expenditures (Campbell, 2001). Researchers interested in professional certification issues should refer to The IIA’s annual *CIA Survey*, which focuses on such issues as changes in and perceptions of the CIA program, employer support of certification, and demographics of CIAs. Information can be found in the survey report regarding the structure of the CIA certification, how it is administered, the extent and nature of incentives to become certified, and other issues that could lead to interesting and potentially fruitful research questions (also see Gramling and Myers, 1997).

In addition to training programs that are designed to provide internal auditors with the technical skills necessary to successfully perform their duties, many functions also provide their auditors with training aimed at developing management and consulting skills. This is due in part to the fact that many internal audit clients are demanding more value-added services from the IAF.

Because of the diverse background and experiences of many new hires, the IAF may find it difficult to develop a single training program that meets the needs of all of its employees. For example, a recent college graduate with an accounting degree will have different training needs than an experienced business person. Understanding how various IAFs deal with these different needs, and evaluating the effectiveness of these different approaches, is important for practitioners, and represents an important area to which researchers might contribute.

Academic Research

Analyzing the structure of internal audit tasks can help IAFs develop effective training programs for their auditors. Abdolmohammadi and Usoff (2001) use complexity as one factor for categorizing audit tasks. They argue that complex tasks should be identified so training can be developed to help professionals learn how to perform these tasks. Abdolmohammadi and Usoff assert that poor performance is often attributable to the fact that professionals do not have the opportunity to gain sufficient knowledge and skill with respect to the tasks they are asked to accomplish.

This may be especially true for complex tasks for which there are no well-developed methods of measuring task performance. Since in these cases outcome feedback does not allow auditors to improve performance, task-specific training may be the only way to help auditors learn these skills (Bonner and Walker, 1994). Formal training programs based on designing and implementing an appropriate level of task structure may facilitate learning from experience and help avoid expensive errors in practice (Abdolmohammadi and Usoff, 2001).

It may also be possible to measure the effectiveness of training programs. For example, one organization has developed a spreadsheet that allows them to compute the ROI for training programs and compare one training program to another (Anonymous, 2002).

Research in the external audit field has examined how training affects auditor knowledge acquisition. For example, Earley (2001) finds that two training programs combined are better than either one alone at improving knowledge acquisition in complex auditing tasks.

Research Questions

- What approaches, types, and methods of training are most effective at improving internal auditor performance? What work environment, organizational culture, and other factors affect this relationship and determine the types of training offered?
- What is the value of employing personnel who have certifications, or helping employees become certified? How can the benefits and costs of employee certifications be measured?
- What are the individual and organizational determinants of certification for internal auditors?
- How can the alignment of training programs to the IAF's goals and objectives be measured and monitored?

- What are the costs and benefits of different approaches to training in internal auditing? For example, what are the costs and benefits of cross-training programs in which auditors temporarily switch places with employees from other parts of the organization?
- Is mentoring an effective training practice in internal auditing? What factors (personality types, incentives, etc.) determine the effectiveness of mentoring?

Analyzing Task Structure

Audit departments must understand the nature of the tasks performed in audit and consulting engagements. A careful analysis of generic tasks performed by internal auditors may help IA managers make effective staff assignments. While little is known about how IAFs deal with these issues, task structure has been researched in several different fields.

Academic Research

Extensive work has been done to document audit task structure and complexity (see Bowren, 1998) and to identify the knowledge required to complete various audit tasks. Much of this work is summarized in *The Assessment of Task Structure, Knowledge Base, and Decision Aids for a Comprehensive Inventory of Audit Tasks* by Abdolmohammadi and Usoff (2001). The book contains an inventory of audit tasks classified by task structure as well as a description of the knowledge needed to perform each task. The book discusses appropriate decision aids for each task and posits “several research hypotheses about the positive relationship between task structure as an independent variable and audit experience, professional rank, supervised instances of practice, and decision aids as dependent variables.” In the book’s preface, Arnie Wright notes, “Auditing practitioners may use the data to consider the proper staff assignment of personnel on various tasks, to consider the desirability of developing new decision aids, and to evaluate the need for (and level of) professional training.” Task analysis may provide similar benefits to internal audit practitioners. In the external audit setting, the level of audit task structure has been shown to affect the experience level of auditors assigned to the task (Prawitt, 1995), and has been shown to interact with auditor personality characteristics to affect job performance (Hyatt and Prawitt, 2001). Some of the work done in external audit task analysis will apply to internal audit, but researchers can profitably identify, analyze, and document tasks that are unique to the IAF, and examine the related issues (see next section for a related discussion concerning The IIA’s *Competency Framework*).

Effective task analysis may also benefit internal audit staffing practices and internal audit training and hiring practices — areas that are discussed in other parts of the chapter.

Research Questions

- Do IAFs vary along the dimension of audit structure, as identified in public accounting firms? If so, what are the determinants and effects of this variation in internal auditing?
- Describe and catalog individual internal audit tasks and categorize them in terms of task structure and other important task variables. This could lead to a variety of possible researchable issues. For example, what are the implications for the use of decision aids for various tasks in internal auditing?
- What factors influence the assignment of various audit tasks to audit staff?
- How does task structure differ between assurance and consulting tasks, and what are the effects of these differences (e.g., in terms of staffing assignments, use of decision aids, level of role ambiguity, etc.)?
- What decision aids are used in internal auditing and how are they different from those used in external auditing?

Necessary Skills

The *Standards* indicate that: “Internal auditors should possess the knowledge, skills, and other competencies needed to perform their individual responsibilities. The internal audit activity collectively should possess or obtain the knowledge, skills, and other competencies needed to perform its responsibilities” (*Standard 1210*).

In an effort to ensure that internal auditors possess the skills and qualities that enable them to perform their responsibilities, in 1999 The IIA published a set of reports collectively known as the *Competency Framework for Internal Auditing (CFIA)* (Birkett et al., 1999A). *CFIA* was developed through a series of questionnaires sent to IA experts around the world. The result of these questionnaires is a comprehensive listing of competency standards that delineate the “attributes of a competent internal auditing function, in the light of global ‘best practice’ [and] the capabilities required of key role-takers in a competent internal auditing function.”

The competency standards include tasks that must be performed to “meet the functional requirements of the field of practice” (Birkett et al., 1999A). *CFIA* also discusses the attributes internal auditors must possess in order to make it possible for them to competently perform these tasks. These attributes are separated into two areas: cognitive and behavioral skills, which are each separated into three subcategories. Cognitive skills consist of technical skills, analytic/design skills, and appreciative skills. Behavioral skills consist of personal skills, interpersonal skills, and organizational skills.

Table 1 presents a brief description each of these subcategories.

Table 1 Skills Required of Internal Auditors (adapted from Birkett et al., 1999A)	
Cognitive Skills Technical Skills	Following defined routines with some mastery.
Analytic/Design Skills	Problem identification or task definition and the structuring of prototype solutions or performances.
Appreciative Skills	Making complex and creative judgments, often in situations of ambiguity.
Behavioral Skills Personal Skills	Handling oneself well in situations of challenge, stress, conflict, time pressure, and change.
Interpersonal Skills	Securing outcomes through interpersonal interactions.
Organizational Skills	Securing outcomes through the use of organizational networks.

CFIA also presents a comprehensive list of attributes that fall under each category. These attributes are further separated into those that entering internal auditors, competent internal auditors, and internal auditing management should possess. Table 2 is a reproduction of the table included in Birkett et al., 1999A. This table can be useful for practitioners as they identify qualified recruits, develop training programs, and promote personnel. An understanding of these skills and attributes may also benefit researchers as they study and research related issues.

Table 2. Individual Attributes Required of Internal Auditors					
Key: Entering Internal Auditor – Italics					
Competent Internal Auditor – Normal Type					
Internal Auditing Management – Bold Type					
Technical Skills	Analytic/Design Problem Structuring and Solving Skills	Appreciative Skills Judgment/Synthesis	Personal Skills	Interpersonal Skills	Organizational Skills
<ul style="list-style-type: none"> * Using information technology - database systems - spreadsheets * Communication - literacy/writing - structuring reports * Using relevant statistical methods * Understanding of organizational dynamics * Understanding of theories of risk * Understanding of theories of organizational control * Using information technology - audit software * Apply control system designs and procedures * Documentation of internal audit work 	<ul style="list-style-type: none"> * Logical reasoning * Ability to conceptualize * Problem analysis/structuring * Research skills (finding, accessing, and assessing data) * Using data in problem solving * Linking evidence to arguments and conclusions * Analyzing commercial and financial data * Basic analysis of accounts and accounting reports * Systems analysis and review * Internal audit requirements analysis/definition * Using sophisticated analytic models in support of internal audit judgment 	<ul style="list-style-type: none"> * Recognize importance of/in data * Sorting out the relevant (e.g., in data, evidence) * Judging whether information is sufficient, supportive of opinions * Observant/aware * Critical thinking * Able to be concise/succinct * Accepting of new/other's ideas * Strives for continuous improvement in self * Finding all that is relevant * Sorting out productive, central lines of inquiry * Seeing anomalies and recognizing their implications * Sensing the significance of issues 	<ul style="list-style-type: none"> * Honesty * Integrity * A-political * Inquisitive * Questioning (not blinkered) in line of inquiry * Not dogmatic * Has initiative * A self-starter * Intelligence * Open minded * Flexible * Adapting to circumstances * Effecting change in self * Creativity * Objective * Positive attitude to technology * Sociable * Confident * Enthusiasm * Accepting of responsibility 	<ul style="list-style-type: none"> * Communication - awareness of audience - listening - oral - interpersonal * Presentation skills * A team player * Learning from others * Handling frustration for self * Discretion/tact * Empathy * Diplomacy * Supportive of others * Culture sensitivity * Communication - persuasiveness * Influencing, persuading, motivating, changing others * Leaderships - of teams, groups * Handling an adversarial role 	<ul style="list-style-type: none"> * Finding way around organizations * Attaining a knowledge of the business (products, strategies, processes, markets, risks) * Adapting internal audit work to a wide range of organizational systems, methods, and standards * Negotiating the application of professional standards * Adding commercial value * Making productivity gains * Marketing internal auditing services * Using sophisticated technologies/approaches in managing internal audit work

Table 2. Individual Attributes Required of Internal Auditors (Cont.)					
Technical Skills	Analytic/Design Problem Structuring and Solving Skills	Appreciative Skills Judgment/ Synthesis	Personal Skills	Interpersonal Skills	Organizational Skills
<ul style="list-style-type: none"> * Using/reviewing accounting procedures/principles * Apply laws and regulations * Apply internal auditing technologies and procedures * Using/reviewing accounting principles/procedures * Master of new information technologies * Understanding key principles of specialty fields, including <ul style="list-style-type: none"> - Environmental management systems - Quality management systems - Information Technology controls 	<ul style="list-style-type: none"> * Using industry-specific databases in the internal audit process * Using comprehensive internal auditing approaches * Using extra-organizational information in the internal audit process * Using non-financial evaluation methods in internal audit work * Designing control systems * Organizational analysis <ul style="list-style-type: none"> - Strategies (financing, marketing, production) - Structures - Processes - Risks - Controls * Using models in analysis 	<ul style="list-style-type: none"> * Seeing the internal audit process as a whole * Locating particular problems or situations in terms of more global contexts/responsibilities * Making associations, thinking outside the square * Comprehending internal audit in the context of business * Discriminating between substance and form * Disciplining imagination * Sensing/serving client needs and expectations * Having a sense of practicability, materiality * Assessing the risk associated with internal audit assignments 	<ul style="list-style-type: none"> * Making it happen * Ability to handle pressure * Time management * Decisive * Able to stand ground * Stress management * Patience * Persistence * Dedication * Intuitive/gut-feel * Tenacity * Determination * Handle/welcome change * Proactive * Assertive * Professional demeanor * Pushing the limits * Incisive * Anticipation 	<ul style="list-style-type: none"> * Handling multi-tasking * Able to diffuse conflict, conflict resolution * Ability to calm a situation * Handling frustration for others * Manage intra-group dynamics * Defines requirements (for team, others) * Securing control * Coaching/mentoring * Develop others * Manage inter-group dynamics * Delegation <ul style="list-style-type: none"> - within teams * Conducts meetings * Facilitation * Liaison/negotiation <ul style="list-style-type: none"> - within team - for team 	<ul style="list-style-type: none"> - TQM - project management - time management - using performance criteria - benchmarking - planning * Scheduling * Coping with international transactions, structures and legal arrangements * Building/using relationships and networks * Adding client value * Building trust * Managing internal audit work * Using organizational power sources, and structures * Delegations - within function

Table 2. Individual Attributes Required of Internal Auditors (Cont.)					
Technical Skills	Analytic/Design Problem Structuring and Solving Skills	Appreciative Skills Judgment/Synthesis	Personal Skills	Interpersonal Skills	Organizational Skills
	<ul style="list-style-type: none"> * Adapting internal audit methodologies for evaluating controls in computer systems * Validating assumptions/projections underpinning plans and decisions * Developing prototype solutions to problems * Development of technologies for reducing audit risk * Designing new internal audit technologies for systems analysis and evaluation * Developing internal audit technologies for assessing business risk * Developing methodologies and databases for establishing performance criteria and measuring performance 	<ul style="list-style-type: none"> * Coping with increasingly complex transactions, regulations and organizations * Adapting to revised expectations about internal audit processes and outcomes * Risk awareness * Interpreting relevant laws and standards * Applying disciplinary understandings and research findings to internal audit work * Extending judgment over time (projection) * Knowing what should be there * Sensing what is not there * Making syntheses from isolated evidence * Employing a sense of perspective * Taking a strategic view, seeing the macro as well as the micro 			<ul style="list-style-type: none"> * Reading the culture and politics of an organization * Liaison and negotiation – for function * Leadership - of the function * Using consulting entrepreneurial approaches in selecting areas of internal audit work * Expanding internal audit work into new areas (requiring new skills) * Human resource management * Strategy formation (for function) * Structuring change productivity * Championing empowerment

Table 2. Individual Attributes Required of Internal Auditors (Cont.)					
Technical Skills	Analytic/Design Problem Structuring and Solving Skills	Appreciative Skills Judgment/Synthesis	Personal Skills	Interpersonal Skills	Organizational Skills
	<ul style="list-style-type: none"> * Design of risk management systems 	<ul style="list-style-type: none"> * Being street wise (applying a sense of commercial reality) * Business acumen * Cope with information overload * Able to see big picture * Expect/cope with the bizarre * Desire for win-win * Making sense of complex situations * Managing complexity * Seeks to add value * Seeks to instill quality * Juggling inconsistent priorities * Strives for continuous improvement in others * Developing and using criteria to promote consistency in judgment * Making complex, multivalued judgments in the absence of data and with probabilistic inferences only 			

Technology skills are extremely important in internal auditing. The importance of these skills was accentuated by the responses of survey participants to questions regarding technology. Almost 95 percent of the participants agreed that computer literacy/proficiency will be increasingly required to perform work in the internal audit profession, and over 96 percent of the participants felt that information technology is of central importance in the performance of internal auditing work (Birkett et al., 1999B).

All of these skills are important for outsourced and in-house internal auditors, but some may be more important for one group than another. For instance, outsourced internal auditors may need to possess better organization skills as they balance the demands of several clients. Researchers may profitably examine which skills are more or less important for each group. *CFIA* may also be helpful to researchers examining issues relating to IAF human resource strategies.

Academic Research

Most of what is known about the knowledge internal auditors must possess to be successful is summarized in the reports that develop *CFIA*. Although these reports develop this framework, they do not attempt to test its applicability in practice. This provides researchers with an opportunity to evaluate the relationship between auditor performance and the attributes identified in the framework. In addition to these reports, studies have attempted to identify the attributes of expert internal auditors (Abdolmohammadi and Shanteau, 1992). Research in the external audit realm has also attempted to identify the characteristics and qualities of audit expertise and explain how this expertise is obtained and how it relates to auditor performance (e.g., Bonner et al., 1990). Researchers can also explore the different skill sets and auditor qualities needed for auditing versus consulting engagements.

Research Questions

- What skills are necessary to be a successful internal auditor? Researchers can use the information in *CFIA* as a starting point in examining necessary skills and competencies of internal auditors. Researchers can also use the extensive body of expertise literature in the external audit environment as a starting point and then identify key differences in the internal audit environment to generate relevant research questions.
- How is the required skill set of internal auditors changing?
- What skills are more/less important for outsourced versus in-house internal auditors?

- How is technology changing the necessary skill set of internal auditors?
- What role do decision aids play in supplementing or substituting for necessary skills in internal auditing?
- How do the *CFIA* skill sets relate to different human resource strategies? For example, how do IAFs using different human resource strategies achieve competence in terms of *CFIA*?
- What skills are important for consulting vs. assurance engagements?

Management of Knowledge Resources in the IAF

Internal audit personnel represent the IAF's critical resource and their skills must be evaluated and employed effectively. Managing the IAF's intellectual resources goes beyond simply providing internal auditors with training and seeing that they have the necessary skills to complete their work. It involves utilizing auditor skills in the most effective way possible by deploying them in areas and engagements where their skills will meet the needs of their clients (Gibbs, 1998).

One important part of managing the IAF's knowledge resources is tracking and appropriately deploying auditor skills. Some large audit functions use databases that store employee background information including relevant skills, projects completed, acquired training, development needs, and career interests. In some cases, the database information is accessible to the entire function. One company uses a skill matrix that documents the skills possessed by each member of the IAF. The assessments are made by managers and by the staff themselves. The information can then be used to staff engagements with auditors possessing the appropriate skills (Roth, 2000).

Another important part of knowledge management in an IAF is measuring the effectiveness of these staffing procedures. For example, the IAF can attempt to measure effectiveness of staffing practices by tracking employee satisfaction, turnover, average tenure, the number of requests for permanent assignments of audit personnel, and the number of employee improvement initiatives. To the extent such data is made available for research purposes, researchers could assist in evaluating various approaches to knowledge management within the internal auditing profession.

Internal audit managers are not usually able to make staffing decisions based solely on matching the person to the engagement, but must also consider time and resource constraints.

With the increasing importance of internal auditing's consulting role, audit managers must simultaneously consider the differences in skill sets required in consulting versus assurance tasks. Little is known about how this is done in practice.

Academic Research

Several articles and books have been published on knowledge management (Choo and Bontis, 2002). In an accounting setting, Summers et al. (2000) evaluate the "fit" between auditing and consulting services and the problem-solving style of accounting professionals. The study found that those professionals with innovative problem-solving styles experienced less role stress when performing consulting engagements than when performing audit engagements.

Research Questions

- How do managers assign tasks to internal auditors in practice?
- How is information about task characteristics used to make effective staffing assignments?
- What are the factors that determine which tasks are assigned to which auditors?

Sourcing and Other Flexible Staffing Arrangements

Up to this point, the chapter does not address how IAFs cope with a shortage of adequately skilled auditors. Additionally, the chapter has not discussed the alternative work arrangements that many functions, including IAFs, are offering their employees. The *Standards* recognize these potential challenges: "Staffing should be based on an evaluation of...the available resources" (*Standard 2230*).

When IAFs face a shortage of qualified auditors, they frequently turn to professional services firms that can place skilled internal auditors on the job site. This practice is called cosourcing. Cosourcing is often used for two reasons. First, the IAF may simply lack an appropriate number of auditors to complete the required work. Second, the IAF may have a sufficient number of personnel to complete the work, but it may not have auditors that possess the skills required for the job. This second situation may arise, for example, if the IAF is asked to deal extensively with information systems or other complex areas of the organization. In some extreme cases, the parent organization may decide that the best course of action is to completely outsource the IAF.

Cost is usually one of the major issues for an organization attempting to decide whether to completely outsource the IAF or to maintain it in-house. By outsourcing the IAF, an organization essentially converts the costs of maintaining an in-house IAF to the fee it pays the professional services firm to perform its internal audit work. Practitioners and researchers continue to debate whether outsourcing is a better utilization of firm resources. In many cases, the characteristics of the individual firm will determine whether outsourcing is a viable option. See Chapter 8 for a more detailed discussion of the outsourcing/cosourcing decision many IAFs face.

Another option available to the IAF when faced with a shortage of qualified people is called insourcing—bringing in people with specific expertise from other areas within the organization. In many cases, these individuals will not have auditing skills, but the IAF has need for their specialized knowledge and expertise. For example, Exxon used insourcing to help them cope with and learn from the problems stemming from the Valdez disaster by bringing in an experienced ship captain to help develop controls and other safety procedures to prevent similar disasters (Anderson, 1991). This technique can be especially useful in auditing information systems by adding to the IAF’s available technology expertise.

The *Standards* specifically allow for these practices — “The chief audit executive should obtain competent advice and assistance if the internal audit staff lacks the knowledge, skills, or other competencies needed to perform all or part of the engagement.” (*Standard 1210.A1*)

Because of the changing demographics of today’s workforce, many employers offer flexible staffing arrangements to their employees. These include flexible work schedules, telecommuting, and other arrangements (Gray and Gray, 1996). Often, these arrangements are designed to reduce turnover or meet other needs. If this is the case, the IAF should develop means to determine if flexible staffing arrangements meet these objectives.

Academic Research

The pros and cons of outsourcing the IAF have been explored, and The IIA has published a study examining and describing the nature and effects of outsourcing the IAF (Rittenberg and Covalski, 1997). Researchers can contribute to this line of research by developing theories and applying academic research techniques to better understand the costs and benefits of outsourcing and other practices such as cosourcing and insourcing (Caplan, 2000).

Research has shown that some flexible staffing arrangements lead to reduced costs (Houseman, 2001). Ziegenfuss and Klayton (1995) evaluate the suitability of telecommuting

to the internal auditing profession, and conclude that, if the IAF's sponsoring organization is highly computerized, it will be more likely to adopt and benefit from telecommuting arrangements.

Research Questions

- How widespread are alternative staffing strategies within the internal auditing profession?
- What characteristics of the IAF and parent organization determine the nature and extent of flexible staffing arrangements used?
- Can auditors who utilize alternative staffing options such as telecommuting be effective team members? What are the characteristics of effective flexible staffing arrangements?
- Can flexible staffing arrangements yield cost savings in the internal audit environment?
- What kinds of internal audit tasks are more amenable to flexible staffing arrangements?
- What effects do different flexible staffing arrangements have on the employee (productivity, career advancement, on-the-job training, job satisfaction, etc.)?
- Can agency theory provide insights as to why an organization might choose to outsource or maintain an in-house IAF? (Adams 1994, p. 11).

Performance Measurement

Although the *Standards* discuss monitoring the quality of the IAF as a whole, they do not elaborate on the need for evaluating the performance of individual auditors. However, measuring and assessing the performance of individual internal auditors is important in monitoring the effectiveness of recruiting and selection methods, making pay raise and promotion decisions, evaluating training programs, and determining training needs. Additionally, as IAF leaders assess the performance of individual auditors they will simultaneously gather important information to help them control the performance of the IAF as a whole.

Performance measurement policies and procedures vary widely among IAFs and can be designed to meet various needs. In large organizations, these procedures and performance

appraisal results will likely be documented in order to organize and keep track of employee progress. In other smaller organizations, the procedures may be more informal. IAFs that utilize teams will need performance measurement procedures that allow managers to assess team and individual performance.

Because performance measures are powerful tools in influencing employee behavior, great care should be taken in developing performance measures that solicit desired behavior. Ultimately, performance measures should motivate auditors and audit teams to add value to the organization while maintaining their independence and objectivity. Among other things, auditors can be evaluated based on customer satisfaction, quality of the audit as determined by managers, level of continuing education, certifications, etc.

Sometimes internal auditors' performance is evaluated in part by post-audit client evaluations of the auditor. Post-audit surveys and similar measurement instruments may introduce a conflict of interest between auditors and auditees. Auditors may alter their recommendations and suggestions in order to receive more favorable post-audit surveys from auditees. This may create a conflict of interest if auditor performance evaluations or compensation decisions are based on these surveys.

Academic Research

Much research has been conducted regarding performance measurement systems and how to design and implement them in practice (Neely, 2002). Some research has attempted to determine the value of specific performance measures (Hemmer, 1998). Similar research can be performed to determine which performance measures properly motivate internal auditors to meet organizational objectives, and which may prove to be ineffective or problematic.

Research Questions

- Which performance measures are most effective for individual internal auditors and internal audit teams?
- What are the determinants of how different IAFs measure internal auditor performance?
- Which performance measures are most effective in providing incentive to internal auditors and aligning their goals with those of the organization?

- Which performance measures and techniques are more likely to compromise internal auditor independence?
- Does performance measurement that involves auditee evaluation of the individual auditor affect the auditor's judgments and findings?

Compensation

Compensation is important for improving individual and organizational performance and for attracting and retaining valuable employees. Because of the important role of compensation in organizations, many firms have attempted to create compensation systems that yield a competitive advantage in hiring and retaining human capital. IAFs utilize a variety of compensation systems, including traditional salary based systems, pay for skill, and pay for performance incentives. Unlike external auditors, internal auditors may even participate in company stock-based incentives.

As discussed previously in this chapter, IAFs hire several different types of employees. The IAF's compensation plan must take these differences into account, along with related employee motivation and morale issues. The compensation systems of IAFs must also take into account structural changes occurring in the profession. For example, the internal auditor's job description is changing and expanding — auditors are performing a wider variety of services for their organizations, they are working together in teams to complete engagements, and the nature of their work is being affected by technology.

Academic Research

A great deal of research into compensation design and related issues has been done in the organizational behavior and human resource areas (Rynes and Gerhart, 2000). A limited amount of research has been done relating specifically to compensation issues for internal auditors, and much of it relates to the issues surrounding incentive pay. For example, Nash and Flesher (1997) argue that, "The willingness to pay incentive compensation to internal auditors is perhaps recognition that auditors are more involved in operational-type audits than in pure financial audits. With financial audits, the auditors might be in a position to 'overlook' income-enhancing errors, while in an operational audit, the incentive compensation would encourage auditors to look for revenue enhancements and cost saving opportunities. Incentive compensation thus makes the auditor more a part of the management team." Researchers interested in these issues should also see DeZoort et al. (2001), who examine the impact of the internal auditor's role and compensation on the external auditor's planning decisions.

Research Questions

- How do internal auditors' compensation expectations change as they assume more responsibility, gain more experience, and perform more complex tasks?
- How do performance-based incentives affect internal auditor independence and objectivity?
- What types of compensation systems effectively encourage continual learning and other organizational objectives?
- What insights can agency theory provide with respect to how internal auditors should be compensated?
- What compensation issues are faced by IAFs that use the management-training-ground model, and how do they handle those issues? What about compensation issues surrounding use of other human resource strategies?

Retention

The turnover an organization experiences is at least partially determined by its staffing techniques. For example, IAFs that are used as a training ground for management will naturally experience high turnover. Retention goals and objectives will differ significantly among IAFs that are used as a management training ground, or that use other human resource strategies. Even if used as a management training ground, retention of the group of core auditors must also be addressed.

To improve retention, many internal auditing functions attempt to provide rich career environments by giving employees challenging assignments. They seek to provide auditors with a broad range of experiences by rotating auditors among different assignments, allowing auditors to implement solutions to the problems they find, and giving auditors international work assignments (DeZoort et al., 2000). Many IAFs attempt to improve job satisfaction and retention by increasingly allowing auditors to exercise their creativity and participate fully in all aspects of assurance and consulting work.

Academic Research

The factors that lead to retention in organizational settings have been widely researched (e.g., Cappelli, 2001). Retention and related issues may be particularly important in the IA

setting because turnover tends to be high especially in IAFs that are used as a management training ground.

Research done in other fields has shown that employees tend to stay with a company if they have a high level of “organizational commitment.” Additionally, turnover among staff is higher if there is a high level of turnover in the management ranks (Downey et al., 2001).

Nouri and Bird (1999) suggest that the internal audit profession use the Myers-Briggs Type Indicator to assess internal auditor personality types and then use this information to match internal auditors to engagements. The article contains an exhibit that summarizes which types of auditors are most suited for certain tasks. Nouri and Bird argue that matching auditors to tasks by their personality types may improve retention as internal auditors experience less role stress (see also Hyatt and Prawitt, 2001).

Research Questions

- What staffing techniques are effective in retaining internal auditors? For example, are internal auditors who work in teams or who are engaged in a wider variety of tasks more likely to stay with the organization? If auditor skills or personalities are matched with specific tasks, does retention improve?
- Will cosourcing affect the organizational commitment an internal auditor feels toward the organization? Do IAFs that cosource experience lower or higher turnover?
- How is the turnover of “core” employees affected by use of the management training ground model?
- Do personal or organizational characteristics explain which people are more likely to remain career internal auditors?

V. Leading

Leadership

The success of the IAF may depend to a great extent on the leadership abilities of internal audit executives and managers. Due to the unique position of the IAF within the organization some leadership traits are likely more important than others. The IAF is a support function that exists to create real value for the parent organization. IAF leaders must have a vision of

the status they want the IAF to achieve within the organization. They must then communicate this vision to internal auditors, management, and line employees (Griffen, 2002).

Other important characteristics IAF leaders must possess are integrity and ethical behavior. Without integrity, IAF leaders cannot expect their auditors to provide the organization with objective, independent assurance and consulting services. This quality lends credibility to internal auditors' work and creates a favorable "tone at the top" for the IAF. The internal auditing environment offers a variety of promising opportunities for ethics-related research.

Finally, internal audit leaders must be able to create an organizational culture within the IAF that motivates employees to create real value for the organization. In some departments, managers allow or even require subordinates to evaluate manager performance. These managers claim that upward reviews allow them to receive useful feedback and communicate their commitment to employees (Gray and Gray, 1996). Additionally, some IA managers involve staff in all meaningful decisions, allow staff to interact with company executives, encourage open communication and creativity, promote core values and ethics, and give recognition and praise for performance (Roth, 2000).

CFIA provides several skills and attributes that are important for internal audit managers. Unlike the general leadership attributes discussed previously, these attributes apply specifically to leaders within the IAF. Please refer to the bolded attributes in Table 2.

Academic Research

Research on effective leadership, leadership style, and other related topics is extensive (e.g., see Dansereau and Yammarino, 1998). Leadership styles have been documented and extensively researched. For example, one line of research divides leaders into two broad categories — those who focus on building positive relationships and those who focus on achieving results. Within these two categories researchers have delineated several leadership types and have attempted to identify the styles that are most effective in any given situation, but no evidence supports one leadership style over another in all situations (Chorn, 1991). The most effective leadership style has been found to be highly dependent on the situation and surrounding circumstances, suggesting a variety of research opportunities in internal audit environments with various characteristics and forms.

Research Questions

- What leadership styles are most effective in an internal audit setting? For example, are internal audit leaders who focus on results generally more effective than leaders who focus on building relationships?
- What are the characteristics of CAEs that are chosen in different organizations, and what characteristics are important to the success of the IAF?
- Is there a relationship between the level of ethical development of internal audit leaders and the ethical behavior of their subordinates? What is the nature of that relationship?
- How does the role of ethics and acceptable business practices vary among IAFs in different cultures, and how are these issues handled in multinational organizations?

Communication

While important in any organizational context, communication is particularly important to an IAF for three reasons. First, open and detailed communication between the IAF and the board contributes to effective organizational governance. The internal audit standards state: “The chief audit executive should report periodically to the board and senior management on the internal audit activity’s purpose, authority, responsibility, and performance relative to its plan” (*Standard 2060*).

Second, effective communication is essential for developing “client” relationships. Whether the IAF is serving the board, management, or some other party, it must clearly define and communicate its activities to these parties. For example, in a survey conducted by PricewaterhouseCoopers, 68 percent of the respondents said that internal auditors’ value-adding activities were not communicated clearly (PricewaterhouseCoopers, 2002). Internal auditors can improve communication with their clients by providing timely feedback, holding pre- and post-engagement meetings to discuss client needs, involving business unit staff to complete various aspects of the engagement, and proactively communicating about problems that arise during the audit (Gray and Gray, 1996).

Finally, internal auditors continuously interact with each other in teams and other settings. Effective communication is needed to coordinate audit work and achieve objectives. Effective communication is particularly important as audit managers give feedback to and receive input from subordinates (Griffen, 2002).

Academic Research

Geiger and Raghunandan (2002) find that among external auditors with longer tenure, there are significantly less audit reporting failures than among auditors who had not been with a client for an extended period of time. Analogous effects may occur in the internal auditing environment. Learning and communication may both play significant roles in developing an effective client/auditor relationship over time in both external and internal settings.

Research Questions

- What communication patterns do effective IAFs establish with management and with the board?
- How do communication processes in IAFs that do a significant amount of consulting differ from those in functions that are primarily assurance oriented?
- How does communication between the IAF and management and the board differ depending on whether the IAF is outsourced?
- Does a relationship analogous to that found in Geiger and Raghunandan (2002), between audit tenure and audit failure, apply in internal audit?

VI. Controlling

Measuring and Controlling the Performance of the IAF as a Whole

“Control is the regulation of organizational activities so that some targeted element of performance remains within acceptable limits” (Griffen, 2002). Although the IAF is part of the organization’s control framework, it must also have its own control framework in place to monitor its compliance with its role and with other important goals and objectives. The *Standards* indicate that, “The CAE should develop and maintain a quality assurance and improvement program that covers all aspects of the internal audit activity and continuously monitors its effectiveness.” (*Standard 1300*). The *Standards* go on to say that the quality assurance program must monitor the IAF in two primary ways. First, the program should help the IAF add value and improve the organization’s operations. Second, the quality program should act to help the IAF comply with the *Standards*.

One of the key ways that the IAF can add value and improve the organization and its governance is to successfully fulfill the IAF's role, defined in conjunction with management and the board of directors. The IAF should develop methods to track its progress in fulfilling the goals and objectives established in that role. For instance, performance measures that deal with the quantitative nature of assurance services may be useful and can include the following: the number of reports issued, percent of the work plan completed, percent over/under budget, etc. These performance measures must be carefully planned and designed in order to communicate and support the IAF's role and strategy. To do this, some IAFs have begun to initiate balanced scorecards that attempt to capture and measure the key drivers of internal audit success (Wong, 2000).

In addition to these numerical measures, IAFs sometimes send post-audit surveys to staff and managers of the business units. Some functions even conduct post-audit interviews with clients to help ensure that the IAF is providing valuable services that meet organizational objectives (Roth, 2000).

Academic Research

The Institute of Management Accountants conducts an annual survey on performance measurement. The latest survey as of this writing focused on the effectiveness of performance measurement systems in supporting organizational strategy (Frigo, 2002). Surveys like these can provide a starting point for researchers as they look for trends in performance measurement systems that are successful in helping organizations control IAF performance. Researchers have also attempted to evaluate different performance measurement systems using procedures other than survey data. This type of research can shed light on why one performance measurement system outperforms another (Neely, 2002).

Research Questions

- What are the common definitions of success or failure in an IAF? Which performance measures accurately measure the success or failure of an IAF?
- How do IAFs measure output, cost savings, and quality?
- Which parties should ultimately evaluate the performance of the IAF? Agency theory suggests that the principal (board of directors, shareholders) should ultimately be responsible to evaluate the agent's (the IAF's) performance. Does this happen in practice, or does the other agent (management) often evaluate the IAF? Why?

- How might a balanced scorecard approach be applied effectively in measuring the performance of an IAF?
- What are the determinants of how organizations measure the performance of their IAFs?

VII. Summary

This chapter provides summary information on what is currently known about how IAFs are managed and staffed. It also suggests questions that may be useful in sparking specific research ideas that might be fruitfully formulated and investigated. It does not attempt or purport to be complete and comprehensive. Rather, its aim is to stimulate thinking about possible research ideas by highlighting potentially interesting practices and issues within the broad area of managing and staffing an IAF. Managing and staffing the internal audit function in a manner that improves and facilitates organizational governance and performance is a tremendously complex undertaking, and very little academic research has been done to understand and investigate the determinants and the effects of the various management and staffing approaches being used. This combination of complexity and lack of rigorous understanding signals a tremendous opportunity for researchers to contribute in meaningful ways. Appendix I consolidates the research questions listed throughout the chapter in an accessible format. It is the author's hope that the discussion and questions provided in this chapter will spark further thinking and research about the important and interesting issues surrounding managing and staffing an IAF.

VIII. Appendix I: Chapter Research Questions

Organizational Level Planning

- How do internal audit plans identify and attempt to mitigate organizational risks?
- In helping management identify organizational risks, what internal auditor characteristics, heuristics, and background lead to more effective risk assessment?
- External auditors are commonly emphasizing a top-down, broad-based view of risk assessment. How is the focus of internal auditors different from that of external auditors in identifying organizational risk? Are internal auditors better or worse at identifying organizational risk than external auditors? Why?
- What training techniques, if any, can help internal auditors gain the ability to effectively identify organizational risks?
- How does planning for IAFs that perform a significant amount of consulting work differ from planning for IAFs that perform primarily assurance work?
- How does the IAF/management relationship vary across countries and cultures?

Planning Individual Engagements

- What characteristics of engagement planning (e.g, timing, people involved, scope, etc.) improve the effectiveness of internal audit engagements? How do these characteristics vary among financial audits, operational audits, and consulting engagements?
- What are the returns to planning internal audit engagements? How do these returns compare to those documented in the external audit setting?
- What are the cost drivers of an internal audit engagement? Can knowledge of these drivers be used to help practitioners accurately estimate the cost of an engagement?
- How is engagement planning different for assurance versus consulting engagements? (See Chapter 4 of this monograph.)

- Does obtaining participation and buy-in during the planning phase affect client attitudes, cooperation, and audit effectiveness?
- What is the optimal engagement length? Does this differ among organizations and industries? (Anderson et al., 1994)
- What auditor characteristics improve the auditor's ability to identify relevant engagement risks?

The Structure of the IAF

- Does the presence of a CAE contribute to effective corporate governance? For example, do organizations with a CAE who reports to the board of directors experience less fraud, external audit failure, etc., than organizations with no CAE or a CAE who reports to management?
- Does combining IA with other assurance functions (security, quality control, etc.) facilitate communication and reduce redundancies? What are the other effects of such combinations?
- What is the optimal span of control for the IAF? How many managers should the IAF have, and how many auditors should they supervise?
- What type of structure facilitates communication in the internal audit function? For example, do IAFs with a CAE and several layers of management communicate more frequently with their employees, external auditors, and clients? What factors influence the quality of communication?
- Reduction in middle management may cut costs, but will it improve effectiveness and efficiency? For example, how will this reduction affect employee morale?
- How do IAFs that do not allow for growth within the function handle career advancement issues? How do these factors affect the types of people who are attracted?
- Does reducing middle management change the number and characteristics of people applying for positions within internal auditing? If a company reduces middle management, is the IAF more likely to serve as a training ground for company management?

- Is IAF size correlated with audit quality?
- Does the size of the IAF impact its reporting structure? For example, do large IAF functions typically have CAEs?
- How effective are the different approaches to organizing the IAF? Will the most effective structures be different in complex governance situations?
- Can agency theory provide insights that help explain the type of structure, as well as the size of, the IAF within different organizations? (Adams, 1994).

Audit Teams

- What characteristics of internal audit work make the use of teams effective? What are the characteristics of internal audit tasks that are more/less suited to teamwork?
- To ensure performance and efficiency, how should teams be selected in an internal audit setting (self-selection, skills matched with job, etc.) and how large should the team be for particular work environments, task settings, and tasks? How long should internal audit teams remain together for different types of tasks?
- Can a self-managed internal audit team effectively handle the management responsibilities that may have previously belonged to a single person?
- What practices help teams make effective decisions in an internal audit setting? What team member characteristics improve team decision-making abilities? How does the use of teams affect on-the-job training?
- How do self-directed teams manage the potential problem of “diffusion of responsibility”?
- How can the performance of internal audit teams be measured?
- Are the conclusions and opinions of an internal audit team seen as more credible, objective, and relevant than those of an individual internal auditor?

The IAF as a Management Training Ground

- Some IAFs act as a training ground for future managers, while others do not. This provides rich potential for comparisons across IAFs on several dimensions. For example, researchers can explore the effectiveness of using the IAF as a training ground both in terms of management preparation and IA effectiveness. At the broadest level, how does using the IAF as a management training ground affect organizational governance?
- Along what dimensions do management trainees and core auditors differ? Some examples may include personality variables, educational background, approaches to problem-solving, nature of relationships with auditees, and attitudes toward independence and objectivity. What types of employees make the best core group of auditors? What types of employees make the best management trainees?
- Teams may include both management trainees and core auditors. How effective are these teams in comparison to other teams?
- Does using the IAF as a management training ground improve recruiting? Why? For example, are higher quality recruits attracted to the IAF if it acts as a management training ground than if it does not?
- Is serving in the IAF an effective way to prepare management trainees to become managers? Why?
- How long should management trainees remain in the IAF?
- Does agency theory shed light on why some organizations use the IAF as a management training ground while others do not? What issues arise when agents who are hired to monitor another agent (management) expect to be later funneled into management positions themselves?
- What are the organizational and IAF characteristics that can predict whether the IAF will be used as a management training ground?

Hiring

- What characteristics of recent college graduates make them more or less effective as internal auditors? What about experienced business people? Other types of recruits?

- What internal auditor personality traits lead to better performance and less job stress?
- Evaluate the backgrounds of current internal auditors. What do they have degrees in? What are the individual and organizational determinants of these characteristics?
- How are training needs and costs affected by the types of candidates hired by the IAF? For example, will it cost more to train experienced business people who have little or no audit knowledge than recent college graduates with a background in accounting?
- Are some organizations more likely to hire a particular type of internal auditor? What are the characteristics of organizations and IAFs that help predict and explain hiring practices?
- What organizational characteristics attract qualified recruits? What are the characteristics of recruits hired by IAFs that act as a management training ground versus those hired by IAFs that are comprised of a core audit group?

Training

- What approaches, types, and methods of training are most effective at improving internal auditor performance? What work environment, organizational culture, and other factors affect this relationship and determine the types of training offered?
- What is the value of employing personnel who have certifications, or helping employees become certified? How can the benefits and costs of employee certifications be measured?
- What are the individual and organizational determinants of certification for internal auditors?
- How can the alignment of training programs to the IAF's goals and objectives be measured and monitored?
- What are the costs and benefits of different approaches to training in internal auditing? For example, what are the costs of cross-training programs in which auditors temporarily switch places with employees from other parts of the organization?

- Is mentoring an effective training practice in internal auditing? What factors (personality types, incentives, etc.) determine the effectiveness of mentoring?

Analyzing Task Structure

- Do IAFs vary along the dimension of audit structure, as identified in public accounting firms? If so, what are the determinants and effects of this variation in internal auditing?
- Describe and catalog individual internal audit tasks and categorize them in terms of task structure and other important task variables. This could lead to a variety of possible researchable issues. For example, what are the implications for the use of decision aids for various tasks in internal auditing?
- What factors influence the assignment of various audit tasks to audit staff?
- How does task structure differ between assurance and consulting tasks, and what are the effects of these differences (e.g., in terms of staffing assignments, use of decision aids, level of role ambiguity, etc.)?
- What decision aids are used in internal auditing and how are they different from those used in external auditing?

Necessary Skills

- What skills are necessary to be a successful internal auditor? Researchers can use the information in *CFIA* as a starting point in examining necessary skills and competencies of internal auditors. Researchers can also use the extensive body of expertise literature in the external audit environment as a starting point and then identify key differences in the internal audit environment to generate relevant research questions.
- How is the required skill set of internal auditors changing?
- What skills are more/less important for outsourced versus in-house internal auditors?
- How is technology changing the necessary skill set of internal auditors?

- What role do decision aids play in supplementing or substituting for necessary skills in internal auditing?
- How do the *CFIA* skill sets relate to different human resource strategies? For example, how do IAFs using different human resource strategies achieve competence in terms of *CFIA*?
- What skills are important for consulting vs. assurance engagements?

Management of Knowledge Resources

- How do managers assign tasks to internal auditors in practice?
- How is information about task characteristics used to make effective staffing assignments?
- What are the factors that determine which tasks are assigned to which auditors?

Sourcing and Other Staffing Arrangements

- How widespread are alternative staffing strategies within the internal auditing profession?
- What characteristics of the IAF and parent organization determine the nature and extent of flexible staffing arrangements used?
- Can auditors who utilize alternative staffing options such as telecommuting be effective team members? What are the characteristics of effective flexible staffing arrangements?
- Can flexible staffing arrangements yield cost savings in the internal audit environment?
- What kinds of internal audit tasks are more amenable to flexible staffing arrangements?
- What effects do different flexible staffing arrangements have on the employee (productivity, career advancement, on-the-job training, job satisfaction, etc.)?
- Can agency theory provide insights as to why an organization might choose to outsource or maintain an in-house IAF? (1994, p. 11).

Performance Measurement

- Which performance measures are most effective for individual internal auditors and internal audit teams?
- What are the determinants of how different IAFs measure internal auditor performance?
- Which performance measures are most effective in providing incentive to internal auditors and aligning their goals with those of the organization?
- Which performance measures and techniques are more likely to compromise internal auditor independence?
- Does performance measurement that involves auditee evaluation of the individual auditor affect the auditor's judgments and findings?

Compensation

- How do internal auditors' compensation expectations change as the auditors assume more responsibility, gain more experience, and perform more complex tasks?
- How do performance-based incentives affect internal auditor independence and objectivity?
- What types of compensation systems effectively encourage continual learning and other organizational objectives?
- What insights can agency theory provide with respect to how internal auditors should be compensated?
- What compensation issues are faced by IAFs that use the management-training-ground model, and how do they handle those issues? What about compensation issues surrounding use of other human resource strategies?

Retention

- What staffing techniques are effective in retaining internal auditors? For example, are internal auditors who work in teams or who are engaged in a wider variety of tasks more likely to stay with the organization? If auditor skills or personalities are matched with specific tasks, does retention improve?
- Will cosourcing affect the organizational commitment an internal auditor feels toward the organization? Do IAFs that cosource experience lower or higher turnover?
- How is the turnover of “core” employees affected by use of the management training ground model?
- Do personal or organizational characteristics explain which people are more likely to remain career internal auditors?

Leadership

- What leadership styles are most effective in an internal audit setting? For example, are internal audit leaders who focus on results generally more effective than leaders who focus on building relationships?
- What are the characteristics of CAEs that are chosen in different organizations, and what characteristics are important to the success of the IAF?
- Is there a relationship between the level of ethical development of internal audit leaders and the ethical behavior of their subordinates? What is the nature of that relationship?
- How does the role of ethics and acceptable business practices vary among IAFs in different cultures, and how are these issues handled in multinational organizations?

Communication

- What communication patterns do effective IAFs establish with management and with the board?
- How do communication processes in IAFs that do a significant amount of consulting differ from those in functions that are primarily assurance oriented?

- How does communication between the IAF and management and the board differ depending on whether the IAF is outsourced?
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- What are the determinants of how organizations measure the performance of their IAFs?

Footnote

¹Adams (1994) discusses the role of agency theory in explaining the role of internal auditing within different organizations. He proposes that agency theory can be used as a framework to explain several phenomena within the internal auditing profession. Several of the research questions introduced in the chapter can be seen through the lens of agency theory.

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CHAPTER 7
INDEPENDENCE AND OBJECTIVITY:
A FRAMEWORK FOR RESEARCH
OPPORTUNITIES IN
INTERNAL AUDITING

Jane F. Mutchler

Disclosure

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The Professional Practices Framework for Internal Auditing (PPF) was designed by The IIA Board of Directors' Guidance Task Force to appropriately organize the full range of existing and developing practice guidance for the profession. Based on the definition of internal auditing, the PPF comprises *Ethics* and *Standards*, *Practice Advisories*, and *Development and Practice Aids*, and paves the way to world-class internal auditing.

This guidance fits into the Framework under the heading *Development and Practice Aids*.

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I. Introduction

Amid a global drive to improve organizational governance, internal auditors face many challenges and opportunities, including increasingly complex and pervasive technology, a need for new skills, flattening organizational structures, demand for an expanding scope of services, and increasing competition and globalization. Internal auditors are developing new strategies to meet these challenges and are becoming more proactive, providing a broadened variety of services and otherwise changing the internal audit model. As the demand for the variety and amounts of non-audit services increases, the need for appropriate guidance and standards for assuring professionalism and especially objectivity in audit services also increases. In addition, the organizational positioning and independence of the internal audit function itself becomes increasingly important.

The purpose of this particular chapter is to discuss the concepts of independence and objectivity within the context of internal auditing and to suggest topics for future research. Internal auditing as a profession is described and within that context the importance of independence of the internal audit function and objectivity of internal auditors is discussed. Professional standards promulgated by The Institute of Internal Auditors and the General Accounting Office of the United States government are described and a framework is offered that may be used by internal auditors and the internal audit function in identifying and managing threats to internal auditor objectivity. Specific threats to objectivity are identified and discussed as well as mitigating factors and tools for managing those threats. Many research questions are raised to promote research that will increase our understanding of conflicts of interest faced by internal auditors and how best to promote and maintain internal auditor professionalism and objectivity and the independence of the internal audit function.¹

II. The Demand for Independence and Objectivity in Professions

As noted in *Independence and Objectivity: A Framework for Internal Auditors* (IIA, 2001), a profession is defined as:

“A calling requiring specialized knowledge and often long and intensive preparation including instruction in skills and methods as well as scholarly principles underlying the skills and methods, maintaining by force of organization or concerted opinion, high standards of achievement and conduct and committing its members to continued study and to a kind of work which has for its prime purpose the rendering of a public service.”

Three components of professionalism, namely integrity, competence, and the use of due care are relevant to the internal audit profession. **Integrity** is an uncompromising adherence to a code of moral values, and the avoidance of deception, expediency, artificiality, or shallowness of any kind. The importance of **integrity** comes from the idea that a profession is a “calling” and requires professionals to focus on the idea that they are performing a public service. **Integrity** dictates the maintaining of “high standards of achievement and conduct.” **Competence** means having the intelligence, education, and training to *be able* to add value through performance. **Competence** comes from “long and intensive preparation, including instruction in skills and methods as well as scholarly principles underlying the skills and methods,” and the commitment to “continued study.” Professional standards are generated “by force of organization or concerted opinion” and lead to the use of **due care**.

The use of **due care** has many components and requires that attention be paid not only to the nature of the professional services performed but also to the manner in which they are performed. It is important that the services offered are appropriate to the task and that such services are carried out in accordance with professional standards when available and in accordance with the highest standards of professional conduct when not available. Cooley on Torts, a legal treatise, describes the obligation for due care as follows:

Every man who offers his services to another and is employed assumes the duty to exercise in the employment such skill as he possesses with reasonable care and diligence. In all these employments where peculiar skill is requisite, if one offers his services, he is understood as holding himself out to the public as possessing the degree of skill commonly possessed by others in the same employment, and if his pretensions are unfounded, he commits a species of fraud upon every man who employs him in reliance on his public profession. But no man, whether skilled or unskilled, undertakes that the task he assumes shall be performed successfully, and without fault or error; he undertakes for good faith and integrity, but not for infallibility, and he is liable to his employer for negligence, bad faith, or dishonesty, but not for losses consequent upon pure errors of judgment (Haggard, 1932).

The definition of a profession is silent on the importance of objectivity when making assessments, judgments, and decisions. It is clear, however, that the necessary and sufficient conditions for value-adding professional services include objectivity along with the three components of professionalism, as described above. An individual can be very objective in the sense that they observe evidence in an unbiased manner. If that individual does not have integrity, a component of professionalism, he or she may choose to act inappropriately in the face of evidence obtained. Along the same lines, that individual may not be competent or may not use due care and thus may not use the evidence in the appropriate manner.

Objectivity ensures that unbiased assessments, judgments, and decisions will be made. Objectivity, integrity, competence, and due care collectively are necessary and sufficient conditions for value adding assurance and consulting services.

A user of professional services relies on the professional because he or she does not have the level of competence needed to conduct the services themselves. The user trusts and expects that the professional has integrity and competency and will use due care. The user also trusts that the professional will make objective assessments, judgments, and decisions while carrying out the professional services and will not be biased by any circumstances. Thus, the patient expects that the MD will order an MRI because she believes that it is necessary for assessing the patient's conditions and not because the MD has part ownership in the MRI machine and receives a payback every time it is used. Likewise an investor expects that the analyst will only give a buy rating when the underlying fundamentals are good and the stock is expected to do well and not because the analyst owns stock in the company and wants to influence the stock price.

On a broad level, the above discussion of a profession and professionals applies to any profession, whatever the subject matter or specialized context. In every case, one expects that the competent professional has integrity and will use due care to make objective assessments, judgments, and decisions. If those conditions are present, then the professional services offered are value adding. On another level, however, the professions differ in the nature of the assessments, judgments, and decisions that are made and in the environmental forces that, on the one hand, operate to ensure that such services are value adding and, on the other, that lead to inappropriate assessments, judgments, and decisions. Clearly internal auditing is a profession and value-adding and effective assurance services offered by internal auditors require **objectivity, integrity, competence, and the use of due care.**

Academic Research

Although research on the need for independence and objectivity for professionals in general appears scarce, Michael Davis, a professor of philosophy at the Illinois Institute of Technology, and Andrew Stark, a professor of management at the University of Toronto, recently edited a collection of essays on conflicts of interest in a variety of professions, including the law, anthropology, literary and art criticism, investment banking, and medicine (Davis and Stark, 2001). An analysis of this publication may provide useful insights into the nature of conflicts of interest relevant to internal auditors, how and why they may compromise objectivity, when they may not, and the best way to avoid and/or manage these conflicts.

Research Questions

- Are the concepts of independence and objectivity important to other professions?
- Which professions and why?
- How do other professions implement the demand for independence and objectivity?
- Are approaches used in other professions relevant to the internal auditing profession?

III. Independence and Objectivity Defined

Although the literature is not necessarily consistent in its precise definitions of independence and objectivity, it is generally agreed that objectivity relates to the quality of the assessments, judgments, and decisions that are activities of any assurance or consulting service, and independence relates to the state of the environment in which the assurance or consulting service takes place. Specifically, *objectivity* is defined as a state of mind in which biases do not inappropriately affect assessments, judgments, and decisions while *independence* is defined as freedom from material conflicts of interest² that threaten objectivity. Objectivity is a desired characteristic of the individual or team who make choices among the full set of assurance service possibilities and of the individual or teams who are engaged in the performance of assurance services and who are making the necessary assessments, judgments, and decisions. Independence is a desired characteristic of the environment in which the assurance services are performed by the individual or team; i.e., it is desirable for the individual or team to be free from material conflicts of interest that threaten objectivity. Conflicts of interest can arise from the individual's or teams' personal environment or from the general environment in which the activity takes place.

Academic Research

A seminal publication by Mautz and Sharaf (1961) discusses independence and describes several meanings of the concept. They note that Carey (1961) discusses two meanings of independence for professional auditors. One he called “the self-reliance of any professional person” and the other is described as the special kind of independence, an “honest disinterestedness” in the results of his or her work that arises because of the public's reliance on an auditor's work. Mautz and Sharaf note that they agree that a practitioner should maintain an honest disinterestedness to promote unbiased judgments and consideration of the facts as determinants of a final opinion. They also believe, however, that in order for a practitioner to have this honest disinterestedness, he or she must have a thorough

understanding of the pressures and factors, “some of which may be so subtle as to be scarcely recognizable,” that may color or influence that disinterestedness. They suggest the recognition of **programming independence** (the auditor has sole control over the nature of the audit program), **investigative independence** (the auditor is free to collect and evaluate all the evidence deemed necessary without interference), and **reporting independence** (the auditor is free to report the results of the audit without interference) as concepts that will help a practitioner achieve honest disinterestedness.

Research Questions

- Are there different or better definitions of independence and objectivity?
- Do the conceptual ideas of independence and objectivity for external auditors apply to internal auditors?³
- Do or should the definitions of independence and objectivity differ across professions?
- Are programming, investigative, and reporting independence important to the internal audit profession? Why or why not?

IV. Independence and Objectivity and the Internal Auditing Profession

Whether it is assurance services provided by internal auditors working for a given company, outsourced internal audit assurance activities with minimal internal auditor involvement, or outside experts providing the services, both independence and objectivity remain important for internal auditors and the internal audit function. The differences across the various ways in which internal audit services are offered lie in the types of conflicts of interest that are faced because of differing incentives and environmental forces that are faced.

The definition of internal auditing found in the overview to this report provides some clues as to the incentives and environmental forces faced by internal auditors. Management employs internal auditors, yet these same internal auditors are also often asked to review the performance of management and others. In addition, management often relies on internal auditors for consulting services and incorporates audit recommendations into the reengineering of business processes. Auditors, in their role as assurance providers, evaluate these processes. The combination of the internal auditor’s dependence on management, the increasing importance of internal audit activities, the growth in the demand for internal audit consulting activities with the resultant problem of internal auditors assessing their own work

product, and increasing internal audit outsourcing leads to escalating concern about internal auditor objectivity.

There are situations, for example, where an internal auditor may have special knowledge and skills to undertake an in-house project but such participation may raise concerns about a potential compromise of objectivity through a lack of independence. The company faces the trade-offs of allowing the project to go forward and managing the associated independence/objectivity risks, or using more costly outside experts or outsourcing providers to complete the project with the internal auditors only playing a monitoring/review role, or the adverse trade-off of simply dropping the project. Internal auditors, because of the nature of the services they perform, gain a deep knowledge and understanding of the company. As such they face conflicts of interest simply because they are the only ones who understand, can undertake, and/or are qualified to perform such consulting services. If they then perform related assurance services, conflicts of interest (i.e., threats to objectivity) arise.

Much of the literature on independence of auditors (specifically external auditors) has differentiated between independence in appearance and independence in fact (often called independence of mind). Standards and the firms themselves have generally focused on controlling various situations and relationships of the auditors that constitute a real or perceived conflict of interest, including the assurance of firewalls between auditing services and any other service that would give rise to a conflict of interest. Most recently, events such as the downfall of Enron, Adelphia, WorldCom, and Global Crossing, among others, have led to a focus on prohibiting the firm rather than just an individual auditor from providing services that appear to conflict with the provision of assessments, judgments, and decisions related to auditing services. It remains to be seen whether similar prohibitions for the internal audit function will arise because of these problems.

In the case of internal auditing the organizational positioning of the function and the nature of activities undertaken both will dictate the set of conflicts of interest (i.e., the threats to objectivity) faced by individual auditors. Some organizations find it cost-effective to have a fully autonomous internal audit unit with high-level reporting to the organization's audit committee or other similar body. Other organizations may not have achieved the economies of scale necessary to justify a separate internal audit unit. Between these two extremes, there are many different types of internal audit units with various organizational structures, differing scopes of responsibility, and differing reporting levels. In addition, the specific type of internal audit activities varies from organization to organization based on factors such as organizational size, type of operations, capital structure, and the legal and regulatory environment. In some organizations, the work of internal auditors is confined to special assurance and consulting

projects for management. In these situations, management is the only user of the internal audit work, and the only party that derives direct benefit from that work.⁴ In other organizations, the internal audit function may provide both assurance and consulting services to a variety of other users both within and outside the organization, such as governing bodies (e.g., boards of directors), regulators, external auditors, customers, and suppliers.

The particular role and placement of the internal audit unit in an organization determines the degree of reliance that should be placed on the assurance and consulting services provided. An internal audit unit with a broad assurance and consulting role ideally should report directly to the governing board of the organization and more specifically to the audit committee of the board or other similar body. Those functions with a narrowly defined role may report to an appropriate lower level of management. The degree of reliance that can be placed on any assurance service is a function of the type of assurance services provided, the conflicts of interest inherent in the organization of the internal audit activity, and the professionalism and objectivity of the assurance service providers. However, even if the status is relatively autonomous, if it serves as a training ground for management, problems may arise since the trainee learns the internal audit function and then goes and works for a unit being audited...they will know how to hide the problems and/or fraud.⁵

In evaluating the appropriate organizational status of the internal audit unit, it should also be recognized that the value of the audit work might be enjoyed indirectly from those constituents that are not direct beneficiaries of the audit reports. For example, external auditors may have greater confidence in internal controls because they know an effective internal audit unit reviews the system. Similarly, the governing body of an organization may obtain assurance about overall control from the fact that the internal audit unit performs risk assessment to determine the appropriate areas to audit. The knowledge that risk assessment and monitoring is being performed may provide implicit assurance in areas beyond those explicitly examined and reported on by internal auditors.

As noted earlier, internal auditors are also being asked to provide assurance to parties outside the organization. For example, regulatory agencies occasionally require reports by management that may include assurances by the internal auditors. In addition, customers and suppliers are beginning to request assurances about such matters as the organization's controls over the confidentiality of shared information, particularly in electronic commerce cases. Providing credible assurance to these outside parties requires the highest degree of organizational status and autonomy on the part of the internal audit unit. Indeed as internal auditors become more involved in reporting to outside parties, should there be any evidence of conflicts of interest and possible biased reporting, litigation possibilities may become a reality.

The key point in this discussion is that the organizational status of the internal audit unit correlates with the scope of engagements that can be undertaken, with the conflicts of interest that will be faced and with the level of reliance that may be placed on assurance and consulting services provided by the internal audit function. When there is high-level reporting, the scope of potential engagements is less limiting and the conflicts of interest are less significant; when there is lower-level reporting, the reporting universe (i.e., the population of users who could benefit from the audit reports) becomes more limited and the conflicts of interest are more significant. The larger the function, the more permanent the staff and the higher up in the organization the function is placed, the less conflicts of interest will be faced.

Academic Research

Much of the research on auditor independence and objectivity has been conducted in the external audit realm. For information on the particular issues in that sector and an analysis of research, see the still-active Web site for the now defunct⁶ Independence Standards Board, for research commissioned by that board, <http://www.cpaindependence.org/>, and the Web site of the AICPA for a white paper on independence issues that they commissioned, <http://www.aicpa.org/members/div/secps/isb/white.htm>. Some, but not necessarily all, of that research is relevant in the internal audit realm.

Recent research by Geiger, Lowe, and Pany (2002) examines how loan officers view and make decisions based on loan proposals within the context of various relationships between the applicant, the auditor that performs the external audit, and the auditor that performs the internal audit function, whether in-house or outsourced to the applicant's external auditor. The results support the position that having outsourced internal audit services performed by the company's external auditor does not, by itself, appear to negatively affect financial statement users' perceptions of auditor independence and other related decisions. The results also support the position that if the external auditors are associated with internal audit activities, they should not perform any management functions as part of the outsourced internal audit work. The results also provide support for internal audit outsourcing if there is a requirement that the engagement team for the external audit and internal audit activities remain separate. More research is needed on issues related to independence and objectivity for internal auditors and the internal audit function.

Research Questions

- What are the differences, if any, in the conflicts of interest faced by internal and external auditors?

- What are appropriate controls (firewalls) for those internal audit units that provide both consulting and assurance services?
- Do outsourced internal audit activities result in greater internal auditor objectivity?
- Do governance, control, and/or audit failures occur more often in firms where the internal audit function provides both assurance and consulting services?
- What are litigation risks for internal auditors who fail to show objectivity in their judgments?
- Will legal exposure change for internal auditors in the post-Enron/WorldCom environment?
- What is an appropriate model to determine the degree of reliance that may be placed on internal audit assurance service activities?
- What is the relation between the organizational positioning of the internal audit function and the overall effectiveness and independence of the organizational governance system?
- What is the relation between the organizational positioning of the internal audit unit and company performance in the capital markets?
- What is the relation between the organizational positioning of the internal audit unit and the occurrence and detection of fraudulent company activities?
- What is the relation between the organizational positioning of the internal audit unit and financial reporting quality?
- How do external auditors make assessments of the work of internal auditors? Do they assess independence and objectivity? If so, how?
- Other than the direct employment relationship, what are the differences in the relationships between internal auditors and management and external auditors and management?
- Do these differences in relationships drive differences in objectivity threats?

- What are differences between perceptions of independence and objectivity and actual independence and objectivity in the internal audit realm?
- What can we learn about independence and objectivity related to internal auditing from the Enron, WorldCom, and the seemingly countless other failures? Where were the internal auditors?
- What is (was) the nature of the internal audit function in Enron, WorldCom, Adelphia, Global Crossing, and other such companies?

V. Standards for Internal Auditors Related to Independence and Objectivity

The Institute of Internal Auditors, in the attribute standards, recognizes the importance of differentiating between an independent internal audit activity and the objectivity of the internal auditors as follows:⁷

1100 – Independence and Objectivity: The internal audit activity should be independent, and internal auditors should be objective in performing their work.

1110 – Organizational Independence: The chief audit executive should report to a level within the organization that allows the internal audit activity to fulfill its responsibilities.

1110.A1: The internal audit activity should be free from interference in determining the scope of internal auditing, performing work, and communicating results.

1120 – Individual Objectivity: Internal auditors should have an impartial, unbiased attitude and avoid conflicts of interest.

The attribute standards also attempt to provide guidance on activities that may lead to impairments of independence and objectivity and call for disclosures when there is impairment.

1130 – Impairments to Independence or Objectivity: If independence or objectivity is impaired in fact or appearance, the details of the impairment should be disclosed to appropriate parties. The nature of the disclosure will depend on the impairment.

1130.A1: Internal auditors should refrain from assessing specific operations for which they were previously responsible. Objectivity is presumed to be impaired if an auditor provides assurance services for an activity for which the auditor had responsibility the previous year.

1130.A2: Assurance engagements for functions over which the chief audit executive has responsibility should be overseen by a party outside the internal audit activity.

1130.C1: Internal auditors may provide consulting services relating to operations for which they had previous responsibilities.

1130.C2: If internal auditors have potential impairments to independence or objectivity relating to proposed consulting services, disclosure should be made to the engagement client prior to accepting the engagement.

The United States government's General Accounting Office (GAO) recently issued an amendment to government auditing standards related to independence.⁸ The standards note that internal auditors play a vital role in government auditing and should be free from organizational impairments to independence. They also note, however, that since internal auditors report to management while external auditors are responsible to third parties outside the audited entity, a fundamental difference exists between internal and external auditors. As such, the amendment to the standards acknowledges the difference by focusing the discussion on organizational impairments when reporting internally to management. Specifically, Section 3.30.5 of the amendment states:

...A government internal audit organization can be presumed to be free from organizational impairments to independence when reporting internally to management if the head of the audit organization meets all of the following criteria:

- a) Is accountable to the head or deputy head of the government entity,
- b) Is required to report the results of the audit organization's work to the head or deputy head of the government entity, and
- c) Is located organizationally outside the staff or line management function of the unit under audit.

Only in such cases where there is organizational independence can top management rely on reports from the internal audit organization.

Because objectivity is itself difficult to measure, independence has been relied upon as a surrogate measure of an unbiased assessment, judgment, or decision related to assurance services. Consequently, professional standards have focused on assuring that assurance service providers are free from conflicts of interest rather than focusing on assuring that objective assessments, judgments, and decisions are made. It is difficult, if not impossible, and even counterproductive, for standards to list all possible threats to internal auditor objectivity. However, it is important to provide a framework for thinking about such threats. To make unbiased assessments, judgments, and decisions while performing assurance services, the internal audit function and internal auditors must be able to manage threats to objectivity even if there are no standards to guide actions. The ability to manage threats to objectivity is an important signal to governing boards, stakeholders, and other external parties that internal audit activities can be relied upon to provide assurance about control, compliance, and other relevant matters. The next section of this chapter provides a model for managing threats to objectivity.

Academic Research

There is no research on internal audit standards, how they are used by internal auditors, or the effects of such standards on the behavior and objectivity of auditors or on the organizational placement of the function.

Research Questions

- With regard to IIA *Standard 1130.A1*, is a year an appropriate period of time?
- With regard to IIA *Standard 1130*, how can one measure the impairment of objectivity?
- With regard to IIA *Standard 1130.C1*, if internal auditors provide consulting services relating to operations for which they had previous responsibility, can they still provide objective assurance services for that unit?
- Are there other standards that may help to assure independence of the internal audit function?
- Are there other standards that may help to assure objectivity for internal auditors?
- How do internal audit functions implement IIA *Standards*?

- What are the effects of the IIA *Standards* on the organizational positioning of the internal audit function?
- What are the effects of the *Standards* on the objectivity of internal auditors?
- Does the focus of governmental auditing standards on organizational impairments to internal auditor independence apply to nongovernmental internal auditors?
- Does the idea from governmental auditing standards that internal auditors are responsible solely to management apply to nongovernmental internal auditors?

VI. A Framework for Managing Threats to Objectivity

Independence and Objectivity: A Framework for Internal Auditors (IIA, 2001) provides a comprehensive framework for managing threats to objectivity. This framework focuses directly on the goal of objectivity at the engagement and personal levels by requiring internal auditors to identify threats to their objectivity. Further, internal auditors are required to assess and mitigate those threats, and assess whether they can be objective given the steps they have taken to mitigate the threats identified. The framework recognizes the fact that objectivity is a state of mind. The assessment of threats to objectivity and their mitigation or management is largely a process of self-assessment by internal auditors (albeit subject to ex ante training/education and ex post internal/external reviews). The framework relies heavily on the professionalism of individual auditors and their supervisors. Internal auditors must be aware of potential cognitive biases that can cloud self-assessment judgments and ethical behavior in such situations. They also must accept the responsibility to manage and disclose threats to their own objectivity and accept departmental, organizational, and professional-level monitoring and reviews of the objectivity management process.

The goal of the framework shown in Exhibit 7-1 is to articulate a more rigorous process for self-regulation in the internal audit environment. The proposed framework, which assumes an appropriate audit scope based on the organizational status of the internal audit unit, is shown in the diagram below. The specific elements of the framework are discussed in detail following the diagram.

**Exhibit 7-1
Managed Objectivity Framework for Individuals**



Identify Threat. The first responsibility of auditors within the managed objectivity framework is to identify possible threats to objectivity. Any situation or circumstance that may cause internal auditors to question their ability to act without bias must be identified as a threat. Even seemingly insignificant threats to objectivity should be identified in this first stage. Threats identified by auditors should be conveyed to the unit or engagement manager so that he or she can proactively participate in the process of managing threats to objectivity.

Assess Significance of Threat. The second stage of the framework requires auditors to assess the significance of threats to objectivity identified in the previous stage. Assessing significance requires those performing internal audit services to consider whether threats might compromise their objectivity and whether seemingly insignificant threats could intensify during the conduct of the audit. The assessment of the significance of threats must be considered both in the context of immediate circumstances and expected or reasonably possible changes in circumstances through the course of the audit.

Identify Mitigating Factors. After identifying and assessing the significance of threats to objectivity, internal auditors should then identify specific mitigating factors present in the environment that may alleviate the threats. Mitigating factors could include, but are not limited to, job security issues, reputation capital, and legal/professional exposure. Internal auditors should take care to identify relevant mitigating factors in determining whether the threat can be mitigated, and if so, how to best mitigate the risk of compromised objectivity.

Assess Residual Threat. After identifying mitigating factors for related threats to objectivity, an internal auditor must then determine whether these factors have sufficiently mitigated the threats to allow them to perform their assigned audit work such that the risk of ineffective assurance services is minimal. The internal auditor must be cautious to avoid assuming that the factors have adequately mitigated all of their objectivity risks and should make this assessment (and others) from the perspective of persons relying on their judgments. In cases where significant residual threats exist, or if the internal auditor is not entirely sure of his or her own objectivity, the assessment should be made or reviewed by the chief audit executive or, when necessary, senior management and/or the audit committee.⁹

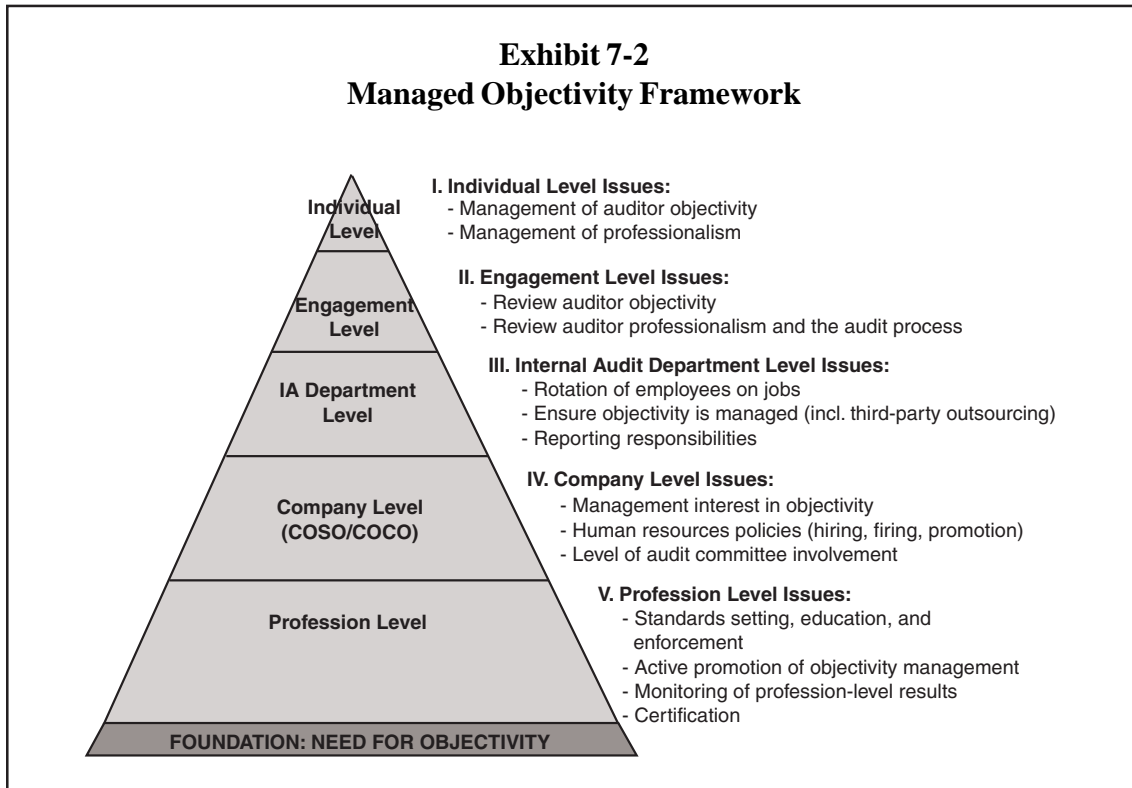
Proactively Manage Residual Threat. Threats to objectivity that are not sufficiently offset by mitigating factors should be appropriately managed by the assurance service providers to the extent possible to ensure assurance procedures are performed without bias. Suggested tools to manage residual threats to objectivity include, but are not limited to, third-party review, separation of audit duties, or contracting of work to another party.

Assess Presence of Unresolved Threats to Objectivity. As assurance procedures are performed, the internal auditor should assess whether objectivity will be achieved to determine whether or not to perform the assigned assurance work. In this stage, the internal auditor must review any remaining threats that (1) were not previously identified or (2) could not be adequately resolved through the identification of mitigating factors or management efforts. Should the internal auditor determine that significant unmitigated and unmanaged threats to objectivity remain, he or she, in conjunction with appropriate parties, should then assess whether it is necessary or practical to perform the work. In most cases, it will be advisable to inform likely users of the services about the unresolved threats prior to commencing assurance work. If, after advisement and consultation, the decision is that the work should be performed despite unresolved threats to objectivity, reporting implications should be carefully considered.

Consider the Reporting and Documentation Implications. Identified mitigating factors and steps taken to manage threats to objectivity must be adequately documented to provide an accurate record of auditors' efforts to achieve objectivity. This record will provide valuable information to the governing body of the organization and to professional quality assurance review teams and may be useful should a concern arise as to internal auditors' objectivity. Further, if the decision is made to undertake work in the presence of material, unresolved threats to objectivity, internal auditors should report the details of the situation to the appropriate level, such as senior management, the audit committee, or the board of directors (or its equivalent) on a continuing or periodic basis, as appropriate. Unresolved threats should also be disclosed in the assurance services report of the engagement. Such communication prevents users from unknowingly deriving unwarranted assurance from work that was performed in the presence of a significant unresolved threat to objectivity.

Ex Post Review and Monitoring. The ex post review and monitoring process begins with the individual internal auditor, who can do a self-review at the end of the audit to determine if judgments were made in the most objective manner possible. This individual review is enhanced by a comprehensive review of the assurance team as a whole. The chief audit executive would conduct an overall review of the assurance program and related engagement staffing for the period to determine that objectivity was effectively managed on every assurance engagement. This would be determined by noting appropriate staffing and the acceptance of engagements compatible with the role of the internal audit unit in the organization. In addition, the director would review and monitor the process for managing threats to objectivity for individual assurance services. As part of the organizational governance function, audit committees or other like bodies can also be part of the ex post monitoring and review process. Finally, the internal audit profession requires quality assurance reviews of internal audits. These reviews can be extended to a peer review of the levels of internal audit involvement in the objectivity management process. Ex-post review and monitoring will help to counterbalance the possible cognitive bias inherent in a self-review process.

Exhibit 7-2 presents a "Framework for Managing Threats to Objectivity" at all levels of auditor involvement.



Level I depicts individual internal auditor level issues and is the point at which threats to objectivity are identified and proactively managed. It is also at the individual level that internal auditor professionalism (i.e., competence, integrity, and the use of due care) is fostered.

Level II depicts engagement-level issues. The engagement level is where a review of individual auditor objectivity and related threats would take place, as well as the standard review of audit practices, procedures, and judgments.

Level III depicts issues at the level of the internal audit department. This is the point at which the chief audit executive takes steps to enhance objectivity such as rotation of auditors on engagements. The chief audit executive would also be responsible for reporting any unmitigated residual threats to objectivity to the audit committee or other appropriate parties and for assuring that objectivity is appropriately managed on all engagements. The chief

audit executive may want to consider outsourcing an engagement if objectivity could not be managed to an appropriate degree.

Level IV depicts organization-level issues. The internal audit department must be given the freedom to appropriately manage threats to objectivity. It also should be encouraged by management to do so actively. Management policies should be established to ensure that auditors are not punished for pointing out problems in the organization. Ultimately, the chief audit executive should be actively involved with the audit committee or similar bodies to ensure the highest level of objectivity and integrity of audit activities.

Level V depicts the profession level and encompasses activities by professional bodies such as The Institute of Internal Auditors. These professional bodies can ensure that standards and guidance are promulgated that will enhance the internal auditor's ability to manage objectivity and can continue to offer certification opportunities to enhance professionalism. They also can help to assure process quality through quality assurance peer reviews and certification opportunities. In financial and some regulated industries, higher thresholds for accountability may necessitate government review of objectivity documents. In other environments, regulatory encouragement and endorsement could oftentimes provide additional reinforcement on compliance with professional requirements. Further, educational programs can be devised to focus on enhancing objectivity and on an understanding of the literature that helps auditors identify and understand threats to objective judgments, rather than the memorizing lists of "independence" rules.

Academic Research

There are no previous academic efforts at devising a framework for managing threats to internal auditor objectivity. However, in the March 2002 edition of the Society for Judgment and Decision Making's *JDM Newsletter*, Society President George Loewenstein wrote a letter that analyzed what behavioral decision research has learned about conflicts of interest. This is important work and very relevant to a discussion of managing threats to internal auditor objectivity.

Loewenstein argues that behavioral decision research can contribute a psychologically grounded perspective on a problem that has been traditionally viewed through an economic lens. He notes that in media coverage of conflicts of interest, the underlying and widely held theoretical perspective is that succumbing to a conflict of interest is a matter of conscious and deliberate choice. However, behavioral decision research provides a different perspective. That research shows that people are generally unaware that they process information in a biased fashion and that, when they are informed about the bias, they generally accept that it exists but believe that it does not apply to them.

Each perspective has its own implications for policy-making. Loewenstein notes that if succumbing to a conflict of interest were a deliberate matter, the problem could easily be cured with appropriate incentives or through inculcation of professionalism. He notes as examples the medical profession that has initiated training programs to help medical students to think independently and the auditing profession where there were then discussions at the SEC of increasing penalties for proven cases of auditor bias. One common remedy Loewenstein notes is, as we offer above, disclosure. Disclosure is supposed to lead to more objectivity on the part of the decision maker or will allow the user of the information to appropriately discount what they are reading. On the other hand, disclosure may lead professionals to feel as if they have discharged their professional responsibilities and may then cease trying to be objective. A final solution discussed by Loewenstein is that of limiting the magnitude of incentives, e.g., limiting the dollar amount of consulting internal auditors may do. Behavioral research, however, finds that bias is severe even with minimal incentives.

So if succumbing to conflicts of interest is deliberate, it can be managed by appropriate training, incentive schemes, and disclosures. On the other hand, if it is unconscious and unintentional, then, Loewenstein argues, the only effective route is to eliminate the conflict of interest. Some of the examples he lists as candidates for prohibition include: Politicians should not be in a position to be bought out by private interests, public accounting firms should not be offering consulting work,¹⁰ security analysts should not be analyzing securities in which they or their company have a private interest, board members should not be permitted to do business with the companies on whose boards they serve, doctors should not be allowed to accept gifts from pharmaceutical companies, and academics whose salaries are paid by universities should not be funded by firms that have an interest in a particular research finding.¹¹

Research Questions

- Are there other frameworks that would help internal auditors to manage threats to their objectivity?
- How do internal auditors in practice and internal audit functions manage threats to objectivity?
- Are internal auditor reactions to conflicts of interest more deliberate or unconscious and unintentional?
- Can internal auditor reactions to conflicts of interest be changed through training?

- Can internal auditor reactions to conflicts of interest be changed through disclosure of the conflicts?
- Can internal auditor reactions to conflicts of interest be changed through minimization of the conflict?

VII. Identifying and Managing Threats to Objectivity

While it is important to have a framework for guidance on how to manage threats to objectivity, it is perhaps even more important to have guidance in identifying the actual threats that may arise and any safeguards that may mitigate the effects of the threats. While there have been a few attempts to put a framework around the identification of threats and safeguards,¹² offered here is that provided in *Independence and Objectivity: A Framework for Internal Auditors* (IIA, 2001). The publication identifies several categories of threats, including self-review, social pressure, economic interest, personal relationship, familiarity, cultural, racial, and gender bias, and cognitive bias. Each of these categories is briefly described below.

Individual Threats

1. Self-review

Self-review threats may arise when an auditor reviews his or her own work. For example, an auditor may audit a department repeatedly, reviewing operations in one year that were previously reviewed in a prior year. Or, the auditor may provide consulting services in connection with a system implementation that he or she must subsequently audit. Or, the auditor may provide recommendations for operational improvements and subsequently review the operations that were revised in accordance with those recommendations. All of these examples represent situations where the auditor could, conceivably, become less critical or observant to errors or deficiencies due to the difficulty of maintaining objectivity when reviewing one's own work.

2. Social Pressure

Social pressure threats may arise when an auditor is exposed to, or perceives that he or she is exposed to, pressures from relevant groups. This situation may occur when the auditor, for example, has inadvertently "cried wolf" in the past when there were no problems. Pressure from the audit customer or group could drive the auditor to overlook suspicious items. Another form of social pressure could occur when an audit team member is reluctant to oppose a generally held view on the part of the audit team itself (a phenomenon labeled as "groupthink" in behavioral literature).¹³

3. Economic Interest

An auditor may have stock options or other financial interests that might be threatened by negative audit findings. This threat also arises when the auditor audits the work or department of an individual who may subsequently make decisions that directly affect the auditor's future employment opportunities or salary.

4. Personal Relationship

This threat may arise when an auditor is a close relative or friend of the manager or an employee of the audit customer unit. The auditor may be tempted to overlook, soften, or delay reporting negative audit findings to avoid embarrassing the friend or relative. Such a threat is magnified if there are any romantic relationships between the auditor and an employee of the auditee in work environments.

5. Familiarity

This threat may arise due to an auditor's long-term relationship with the audit customer or when the auditor has formerly worked in the customer unit. Familiarity may lead an auditor to lose perspective on an audit by making the auditor overly sympathetic to the customer. Alternatively, familiarity may lead an auditor to prejudge an audit customer on the basis of previous problems (or non-problems) and assume a posture consistent with the prejudgment rather than taking a fresh, objective look.

6. Cultural, Racial, and Gender Biases

This threat may arise from cultural, racial, or gender biases. For example, in a multidivisional entity, a domestically based auditor may be biased or prejudiced against audit customer units located in certain foreign locations. Or, an auditor with limited understanding of a host culture may be unduly critical of different practices and customs. Or, an auditor may be unduly critical of audit customer units managed or staffed by employees of a particular race or gender.

7. Cognitive Biases

This threat may arise from an unconscious and unintentional psychological bias in interpreting information depending on one's role in a situation. For example, if one takes a critical audit perspective, one may overlook positive information and, conversely, if one takes a positive facilitative perspective, one may discount negative information. In addition, an auditor may come in with certain preconceived notions and may then tend to see evidence confirming such notions.

Combinations of Threats

Although seven individual categories are used for expositional purposes to enhance the clarity of the examples provided, there could be circumstances when two or more categories of threats are present at the same time. For example, many internal auditors provide control self-assessment services that involve working with audit customer representatives and facilitating their review of risks and controls. A number of threats can arise in these circumstances. For example, self-review threats may arise if an auditor acts as a facilitator and subsequently is assigned to review the controls that were the subject of the control self-assessment exercise. Also, social pressure threats may arise if the facilitating auditor feels pressure to not “breach the trust” placed in the self-assessment process by the participants who candidly reveal system weaknesses. In this context, an auditor may be concerned that future self-assessment exercises would be undermined by negative audit findings. Furthermore, when an auditor takes on a facilitating role, he or she may become too familiar with some audit customers, developing personal relationships that could make it difficult to be critical of those audit customers. Or, the auditor may develop unconscious cognitive biases due to the positive facilitative role adopted in the self-assessment process by interpreting information about the auditees more positively than objectively called for and seeking confirmatory information.

While the auditor may only be dealing with individual threats in some cases, in many situations there will be multiple threats, multiple mitigating factors, and multiple management tools used to address residual threats. Therefore, a comprehensive and integrated approach in identifying, assessing, and managing potential threats to objectivity is recommended.

Threats at the Unit Level

To this point, the examples that have been provided have all been at the individual level. However, the proposed framework for managing objectivity can be applied at the internal audit unit level as well. Some have suggested that certain activities, such as consulting services and control self-assessment services, performed by the internal audit unit may threaten the unit’s objectivity and result in role conflict. For example, if a unit provides extensive management consulting services, threats to objectivity may arise in the form of self-review threats and familiarity threats at the unit level. Self-review threats may arise when the same unit is involved in implementing an entity-wide management information system and subsequently is engaged in reviewing the same system.

Providing consulting services does not in and of itself necessarily compromise objectivity, particularly if the auditor is involved primarily in an advisory capacity rather than a decision-making capacity and there is no reason to presume that the auditor's objectivity is automatically compromised. A professional internal auditor and internal audit unit, within the context of the framework described herein, should be able to recognize potential threats to objectivity in subsequent audit assignments related to the earlier consulting service, consider mitigating factors, and take appropriate action to reduce or eliminate residual threats to objectivity

Mitigating Factors

The identification of potential threats is the starting point for the process of managing such threats to objectivity. As mentioned previously, there may be mitigating factors that limit the significance of identified potential threats. Mitigating factors would be considered in the context of specific circumstances; however, identified here are a number of mitigating factors that may counteract potential threats to objectivity. The following list is not intended to be exhaustive. Rather, it is intended to illustrate the range of mitigating factors that may reduce or eliminate threats to objectivity.

Organizational Position and Policies: The auditor/audit unit's organizational position and policy statements at various levels addressing customer relations may bolster the auditor's position in the organization and create disincentives for audit customers to influence or intimidate auditors. Such policies can provide insulation from being punished for raising management's awareness of a problem.

Environment — Strong Organizational Governance System: A supportive environment, in both the internal audit department and the company as a whole, that encourages learning and continuous improvement may reduce the perceptions of failure associated with flaws in recommendations, system implementation processes, and other advice. Thus, auditors and audit customers would be less fearful of potentially negative outcomes and of reporting on possible prior mistakes. A significant component of a supportive environment is the audit committee. A strong audit committee is of crucial importance in assuring auditor objectivity and professionalism.

Incentives (Rewards, Discipline): A system of rewards and disciplinary processes in both the internal audit unit and in the company as a whole can reduce threats to objectivity. For example, an environment that rewards critical and objective thinking or penalizes bias or prejudice can encourage objectivity in the face of these types of threats.

Use of Teams: A key aspect of objectivity involves corroboration of assessments, judgments, and decisions by others. The use of teams rather than individuals to conduct assurance services can help diffuse cognitive biases, familiarity, personal relationship threats, and self-review threats. One caution that must be raised here is the risk that social pressures may cause a team member to be fearful of expressing a view opposing the generally held team view (i.e., due to “groupthink”) or the view of a socially powerful team member.¹⁴

Supervision/Peer Review: Studies of accountability in auditing indicate that review processes and their attendant impact on audit judgments through performance incentives, justification requirements, and feedback can mitigate individual biases. The anticipation of peer and supervisory review may also increase an auditor’s self-awareness and help to avoid potential biases or other threats to objectivity.

Elapsed Time/Changed Circumstances: The passage of time can reduce the potential self-review threats arising when an auditor reviews his or her own recommendations made during previous audits. Elapsed time may also lead to changes in circumstances and changes in personnel in the audit customer area, leading to a reduction or elimination of potential threats such as familiarity, social pressure, and self-review.

Internal Consultations: This mitigating factor is related to the use of teams and supervision/peer review. Internal consultation is distinct in that in a situation of doubt, the auditor manages threats to objectivity by (voluntarily and on his or her own initiative) asking a respected, professional colleague or superior for input or feedback. The internal audit unit itself could develop a formal process, setting out criteria to establish when an internal auditor is encouraged or required to seek consultation.

Objectivity Management Tools

As mentioned previously, after considering threats and mitigating factors, the auditor may conclude that there remain significant unmitigated threats to objectivity. In such cases, specific actions would be identified to eliminate those threats. While the actions taken must be tailored to the specific circumstances, identified below are a number of management tools that could be used to reduce or eliminate threats to objectivity. Some of these tools overlap with the mitigating factors previously identified; e.g., use of teams and supervision/peer review. This is because objectivity management may require implementing processes in one context to mitigate threats that exist, while in another context the mitigating factors may already be an inherent part of the process. For example, some audits are of a size that teams are always used, whereas in another context a team may be used specifically to mitigate a threat to objectivity. The following list is not intended to be exhaustive. Rather, it is intended to illustrate the range of management tools available to manage threats to objectivity.

Hiring Practices: Although hiring practices relate primarily to managing professionalism, they can also relate to managing objectivity. For example, screening to assure that potential employees do not have conflicts of interest that threaten objectivity is the starting point for building an objective audit function.

Training: Training (in scientific methods and approaches) improves objectivity itself. Further, training can also help auditors recognize potential threats to objectivity so that they can avoid them or effectively manage them in a timely fashion.

Supervision/Review: Close supervision of auditors and careful review of their work beyond what is normal can encourage them to approach audit issues objectively since they are accountable for their judgments. As mentioned previously, research indicates that accountability is an important factor in improving judgments and reducing biases in an audit context.

Quality Assurance Reviews: Internal and external reviews of the internal audit department and its activities, processes, and procedures can help both to assure that threats to objectivity are effectively managed and that professionalism is maintained.

Use of Teams: Assigning an additional team member to an audit can diffuse or eliminate potential threats to objectivity by bringing an additional perspective to bear on the audit. This additional perspective can counterbalance potential threats due to familiarity, personal relationships, self-review, or other potential threats to objectivity on the part of one or more audit team member. In addition, appropriate assignments within teams can be made to maximize the mitigating effects of the team approach.

Rotation/Reassignment: Rotating audit assignments can reduce the degree of familiarity and self-review. There are different types of rotation, including rotating all the staff from one audit to another so that new staff always do the audit, rotating some of the staff but not all, and keeping the audit staff on a repeated audit but rotating the work done by the staff.

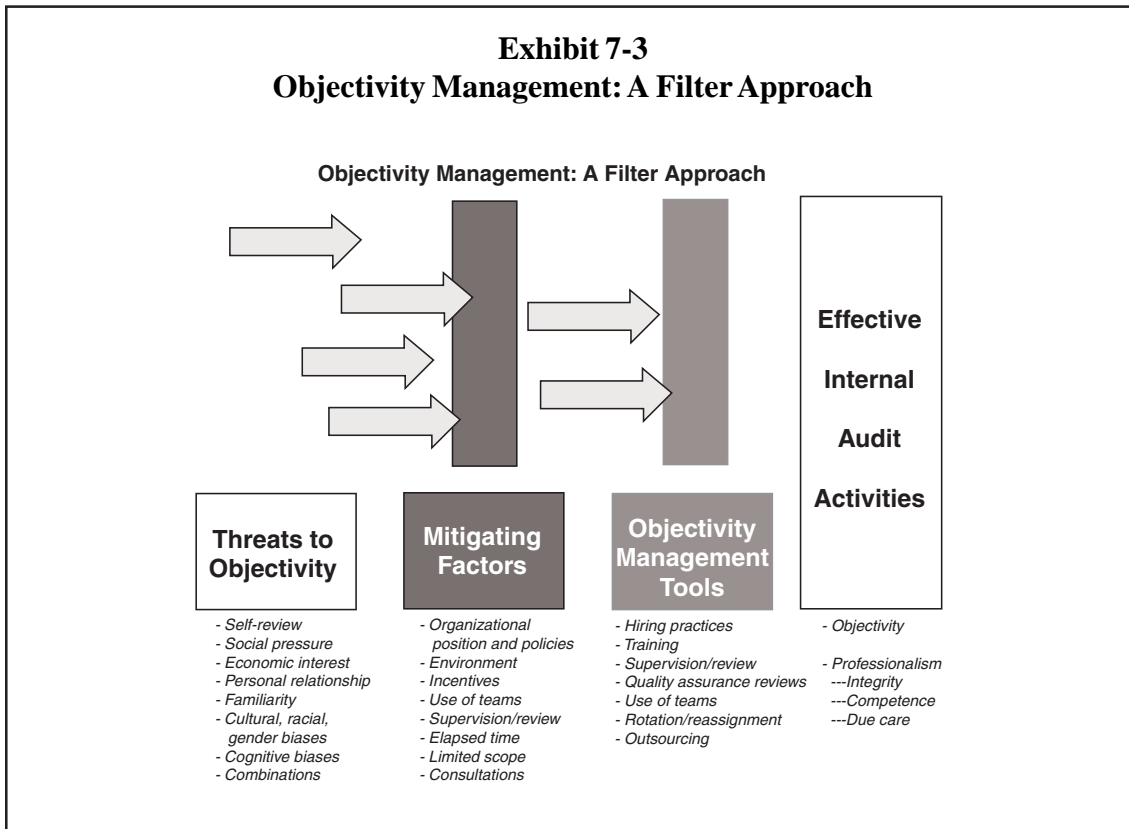
Outsourcing: When internal tools cannot be effectively used to manage threats to objectivity, outsourcing to an external service provider can help ensure that objective judgment is rendered in a specific circumstance. Such decisions, however, will require additional financial resources and may lead to unease among internal audit staff.

Unresolved Threats

There may be circumstances when threats to objectivity remain unresolved because no internal management tools are available to address unmitigated threats and the engagement cannot

be outsourced. The model indicates that these unresolved threats should be disclosed by means such as reports to audit committees or other similar independent bodies so that the auditor’s recommendations are interpreted in the appropriate context. This disclosure may also take place in the audit report as appropriate. Of course, in some situations, audit committee members or top management may in fact be the problem. In such cases, the best alternative may be to refuse to conduct the audit. If the problem is systemic, the internal auditor should evaluate the effect that remaining with the organization will have on his or her professionalism and the underlying commitment to integrity.

Exhibit 7-3 depicts the process of managing threats to objectivity, which along with professionalism yields effective internal audit activities. These examples of threats, mitigating factors, and management tools are only illustrations and are not meant to be an exhaustive, mutually exclusive, and comprehensive list. Future research, standard-setting efforts, and other professional activities will lead to the identification of additional and/or different categories of threats, mitigating factors, and management tools.



Academic Research

There is no academic research directly related to identifying and managing threats to internal auditor objectivity. There have been, however, attempts by professional and policy-making bodies to identify categories of threats to auditor objectivity and related safeguards or mitigating factors.

The Federation Des Experts Comptables Europeens (FEE) from the European Union describes threats to auditor objectivity and discusses possible safeguards (FEE, 1998). Although targeted at statutory auditors, it is also relevant for internal auditors.

The threats identified are as follows:

- Personal, business, or financial links between auditors and clients
- Holding a managerial or supervisory role in an audit client
- Providing non-audit services
- Audit fee arrangements¹⁵
- Acting for a client for a long period of time
- Actual or threatened litigation between an auditor and client
- When the client seeks opinions from other statutory auditors
- Audit firm arrangements¹⁶

In its conceptual framework project, the Independence Standards Board described threats as pressures and other factors that impair an auditor's objectivity and identified five types of threats to auditor independence — self-interest, self-review, advocacy, familiarity (or trust), and intimidation — that may be posed by various activities, relationships, or other circumstances.¹⁷ They also described safeguards to auditor independence as controls that mitigate the effects of threats.

As noted earlier, the GAO issued an amendment to the standards on independence (GAO, 2002). In that document, auditors are guided to consider three general classes of impairments to independence — personal, external, and organizational. All of the various conceptualizations of threats and safeguards for auditors can serve as input to deriving specific guidance for internal auditors.

Research Questions

- Is there a better way to organize threats to internal auditor objectivity and the related mitigating factors and management tools?
- What are threats to objectivity that arise from personal characteristics and circumstances?
- What are threats to objectivity that arise from organizational characteristics and circumstances?
- Develop a model that will identify the threats to objectivity of an internal audit unit or internal auditors and then generate an “objectivity/independence” score.
- What is the point at which, in measuring objectivity of the auditor and independence of the function, those interested can no longer rely on the internal auditor’s work?
- What are the effects on objectivity and perceived independence of using the internal audit unit as a training ground?
- Is there an optimal mix of career internal auditors and those who pass through for training for an effective internal audit function?
- Can training improve the internal auditor’s objectivity?
- As internal audit becomes a more important component of the organizational governance systems, will disclosures of independence and threats to objectivity to parties outside of management and the audit committee become an issue?
- Should management report on the organizational structure and assignments of the internal audit unit to the audit committee of the board of directors? Should they report to external stakeholders in financial statements?
- Are team assessments, judgments, and decisions apt to be more objective than individual assessments?
- How often and for what reasons do audit committee members interact with internal auditors?

- Is there evidence that the greater the interaction between internal auditors and audit committee members, the higher the quality of operations and financial reporting?
- What are internal auditors and internal audit functions currently doing to identify threats to objectivity?
- What are the current tools that internal auditors and internal audit functions use to manage threats to objectivity?

VIII. Conclusions

Independence and objectivity continue to be important concepts in the internal auditing profession. Much of the previous research has been focused in the external audit arena. With the increasing visibility of and reliance on the internal audit function, it is important to begin focusing such research efforts on the internal audit world. Many research questions and issues are raised in this chapter to facilitate that effort.

IX. Appendix I: Chapter Research Questions

The Demand for Independence and Objectivity in Professions

- Are the concepts of independence and objectivity important to other professions?
- Which professions and why?
- How do other professions implement the demand for independence and objectivity?
- Are approaches used in other professions relevant to the internal auditing profession?

Independence and Objectivity Defined

- Are there different or more appropriate definitions of independence and objectivity?
- Do the conceptual ideas of independence and objectivity for external auditors apply to internal auditors?
- Do or should the definitions of independence and objectivity differ across professions?
- Are programming, investigative, and reporting independence important to the internal auditing profession? Why or why not?

Independence and Objectivity and the Internal Auditing Profession

- What are the differences, if any, in the conflicts of interest faced by internal and external auditors?
- What are appropriate controls (firewalls) for those internal audit units that provide both consulting and assurance services?
- Do outsourced internal audit activities result in greater internal auditor objectivity?
- Do governance, control, and/or audit failures occur more often in firms where the internal audit function provides both assurance and consulting services?
- What are litigation risks for internal auditors who fail to show objectivity in their judgments?

- Will legal exposure change for internal auditors in the post-Enron/WorldCom environment?
- What is an appropriate model to determine the degree of reliance that may be placed on internal audit assurance service activities?
- What is the relation between the organizational positioning of the internal audit function and the overall effectiveness and independence of the organizational governance system?
- What is the relation between the organizational positioning of the internal audit unit and company performance in the capital markets?
- What is the relation between the organizational positioning of the internal audit unit and the occurrence and detection of fraudulent company activities?
- What is the relation between the organizational positioning of the internal audit unit and financial reporting quality?
- How do external auditors make assessments of the work of internal auditors? Do they assess independence and objectivity? If so, how?
- Other than the direct employment relationship, what are the differences in the relationships between internal auditors and management and external auditors and management?
- Do these differences in relationships drive differences in objectivity threats?
- What are differences between perceptions of independence and objectivity and actual independence and objectivity in the internal audit realm?
- What can we learn about independence and objectivity related to internal auditing from the Enron, WorldCom, and the seemingly countless other failures? Where were the internal auditors?
- What is (was) the nature of the internal audit function in Enron, WorldCom, Adelphia, Global Crossing, and other such companies?

IIA Standards Related to Independence and Objectivity

- With regard to IIA *Standard 1130.A1*, is a year an appropriate period of time?
- With regard to IIA *Standard 1130*, how can one measure the impairment of objectivity?
- With regard to IIA *Standard 1130.C1*, if internal auditors provide consulting services relating to operations for which they had previous responsibility, can they still provide objective assurance services for that unit?
- Are there other standards that may help to assure independence of the internal audit function?
- Are there other standards that may assure objectivity for internal auditors?
- How do internal audit functions implement IIA *Standards*?
- What are the effects of the IIA *Standards* on the organizational positioning of the internal audit function?
- What are the effects of the standards on the objectivity of internal auditors?
- Does the focus of governmental auditing standards on organizational impairments to internal auditor independence apply to nongovernmental internal auditors?
- Does the idea from governmental auditing standards that internal auditors are responsible solely to management apply to nongovernmental internal auditors?

A Framework for Managing Threats to Objectivity

- Are there other frameworks that would help internal auditors to manage threats to their objectivity?
- How do internal auditors in practice and internal audit functions manage threats to objectivity?
- Are internal auditor reactions to conflicts of interest more deliberate or unconscious and unintentional?

- Can internal auditor reactions to conflicts of interest be changed through training?
- Can internal auditor reactions to conflicts of interest be changed through disclosure of the conflicts?
- Can internal auditor reactions to conflicts of interest be changed through minimization of the conflict?

Identifying and Managing Threats to Objectivity

- Is there a better way to organize threats to internal auditor objectivity and the related mitigating factors and management tools?
- What are threats to objectivity that arise from personal characteristics and circumstances?
- What are threats to objectivity that arise from organizational characteristics and circumstances?
- Develop a model that will identify the threats to objectivity of an internal audit unit or internal auditors and then generate an “objectivity/independence” score.
- What is the point at which, in measuring objectivity of the auditor and independence of the function, those interested can no longer rely on the internal auditor’s work?
- What are the effects on objectivity and perceived independence of using the internal auditor unit as a training ground?
- Is there an optimal mix of career internal auditors and those who pass through for training for an effective internal audit function?
- Can training improve the internal auditor’s objectivity?
- As internal audit becomes a more important component of the organizational governance systems, will disclosures of independence and threats to objectivity to parties outside of management and the audit committee become an issue?

- Should management report on the organizational structure and assignments of the internal audit unit to the audit committee of the board of directors or to external stakeholders in financial statements?
- Are team assessments, judgments, and decisions apt to be more objective than individuals?
- How often and for what reasons do audit committee members interact with internal auditors?
- Is there evidence that the greater the interaction between internal auditors and audit committee members, the higher the quality of operations and financial reporting?
- What are internal auditors and internal audit functions currently doing to identify threats to objectivity?
- What are the current tools that internal auditors and internal audit functions use to manage threats to objectivity?

Footnotes

¹The elements for describing independence and objectivity and the framework for objectivity management are from the recent IIA report, *Independence and Objectivity: A Framework for Internal Auditors* (IIA, 2001).

²Loewenstein defines a conflict of interest as “a situation in which a person, such as a public official, an employee, or a professional has a private or personal interest sufficient to appear to influence the objective exercise of his or her professional duties. (Society for Judgment and Decision Making *JDM Newsletter*, “A Letter from the President,” Volume XXI, Number 1, March 2002).

³If one believes that the public is the real client of the internal auditor, then they would apply. The answer may differ if one believes that the board of directors and/or management is the client.

⁴Note that management still has a need for professionalism and objectivity even if they are the only users.

⁵This situation is similar to that of an external auditor accepting a position with a client.

⁶For the reasoning behind the SEC’s decision to no longer rely on the Independence Standards Board for external auditor independence standards and for links to the SEC’s rules on external auditor independence, see <http://www.sec.gov/rules/policy/33-7993.htm>.

⁷For the full text of The IIA’s *Standards for the Professional Practice of Internal Auditing*, see http://www.theiia.org/ecm/guidance.cfm?doc_id=124.

⁸For information on the amendment and the full text of GAO standards, referred to as “Yellow Book” standards, see <http://www.gao.gov/>.

⁹This, of course, assumes that audit committee members are competent and capable of making such assessments. For recent legislation that has significant impact on both the accounting profession and on audit committee responsibilities, see the Sarbanes-Oxley Act at <http://www.fei.org/advocacy/download/Sarbanes-OxleyAct.pdf>.

¹⁰It then follows that internal auditors should not do consulting work.

¹¹Loewenstein makes many of the same arguments in the coauthored article, “The Impossibility of Auditor Independence,” *Sloan Management Review*, coauthored with M. Bazerman and K.P. Morgan, Summer 1997, pp. 89-94.

¹²See especially, *Statutory Audit Independence and Objectivity: Common Core of Principles for the Guidance of the European Profession Initial Recommendations*, July 1998, Federation Des Experts Comptables Europeens (FEE).

¹³The notion of “groupthink” refers to a process of group dynamics. When we work together in groups, we sometimes suffer illusions of righteousness and invincibility. See Janis, Irving, *Victims of Groupthink: Psychological Study of Foreign-policy Decisions and Fiascoes (2nd Edition)* (Boston: Houghton Mifflin, 1972).

¹⁴For seminal work in social conformity, see Asch, Solomon E., “Studies of Independence and Conformity: A Minority of One Against a Unanimous Majority,” *Psychological Monographs*, 70:9 (1956): (Whole No. 416); Raven, Bertram H., and Jeffrey Z. Rubin, *Social Psychology* (New York: John Wiley and Sons, 1983), pp. 566-9, 575.

¹⁵This includes cases where fees are contingent on some outcome, situations where fees are outstanding beyond a normal credit period, etc.

¹⁶An example is given where the statutory auditor must ensure that individuals employed by the audit firm who are not statutory auditors are unable to exert influence over the conduct of the audit.

¹⁷See <http://www.cpaindependence.org/> for access to “A Conceptual Framework for Auditor Independence,” A Staff Report, Independence Standards Board, July 2001.

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CHAPTER 8
INTERNAL AUDITING'S SYSTEMATIC,
DISCIPLINED PROCESS

W. Morley Lemon
Kay W. Tatum

Disclosure

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The Professional Practices Framework for Internal Auditing (PPF) was designed by The IIA Board of Directors' Guidance Task Force to appropriately organize the full range of existing and developing practice guidance for the profession. Based on the definition of internal auditing, the PPF comprises *Ethics* and *Standards*, *Practice Advisories*, and *Development and Practice Aids*, and paves the way to world-class internal auditing.

This guidance fits into the Framework under the heading *Development and Practice Aids*.

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I. Introduction

The Institute of Internal Auditors' (IIA's) *Definition of Internal Auditing* introduces internal auditing as a “systematic, disciplined approach” (IIA, 1999b). According to the Guidance Task Force that framed the definition, this distinctive approach is the “heart and soul of internal auditing’s unique franchise” and “the primary basis for the profession’s success” (IIA, 1999a, 8). The approach, which is applicable to the entire range of assurance and consulting activities encompassed by the definition, is chronicled in the *Standards for the Professional Practice of Internal Auditing (Standards)* (IIA, 2001b).

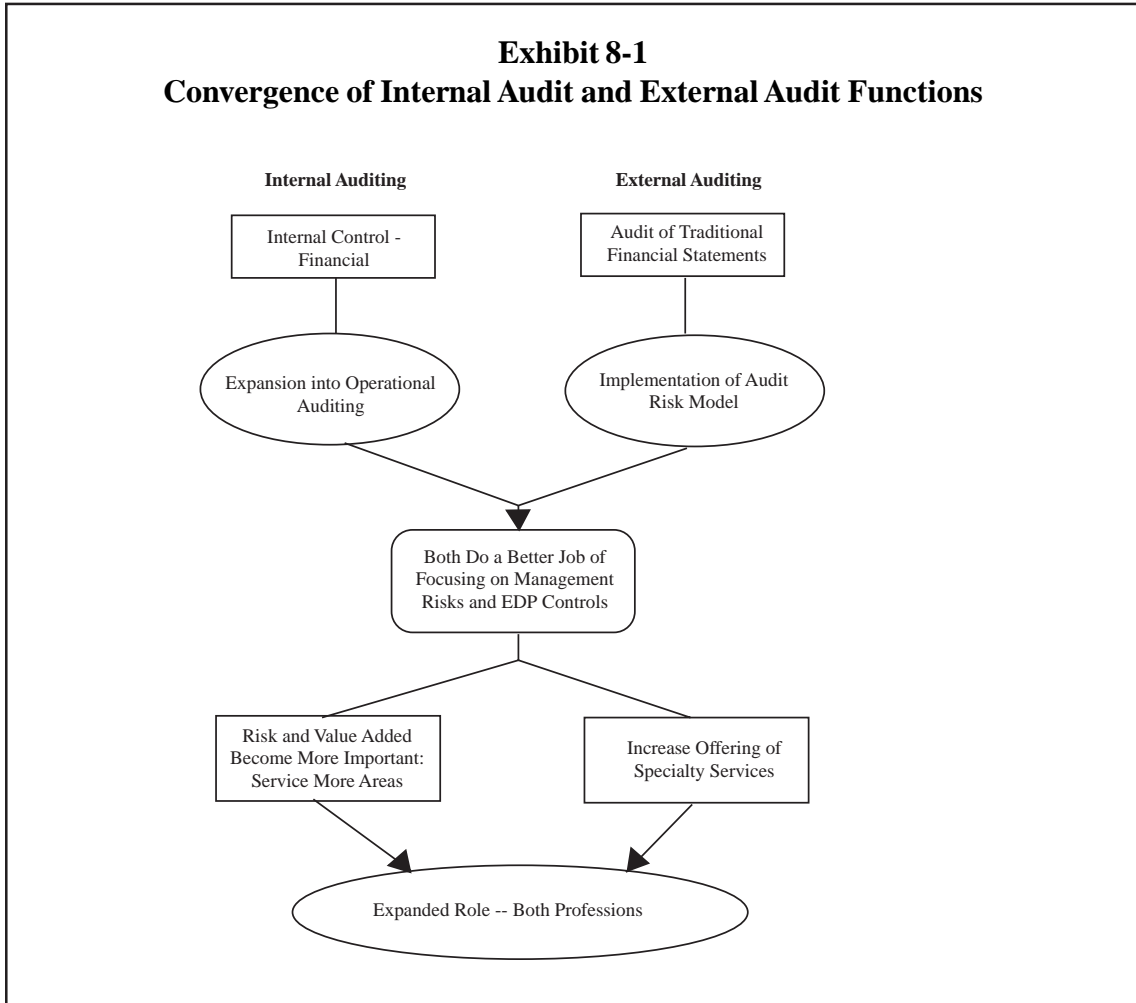
This chapter discusses the systematic and disciplined process of internal auditing. The chapter:

- Examines the parallel development of the internal and external auditing processes.
- Introduces a model that provides a context for the internal auditing process along three dimensions — “engagement type,” “degree of cosourcing,” and “organization characteristics.”
- Examines the internal auditing process itself using the framework of an engagement enunciated in the *Standards* — planning the engagement, performing the engagement, and communicating the engagement results.

As we developed this chapter, we identified many interesting and important issues related to the internal auditing process. In this chapter, it was not our purpose to develop these issues. Rather, we simply framed them as questions for future investigation. The questions are presented at the end of each section and summarized in Appendix 1.

II. Recent Changes in Internal and External Auditing

Auditing processes for both internal auditors and external auditors have changed in the past eight to 10 years. Factors that prompted these changes included the globalization of business, advances in technology, and demands for value-added audits. Some accounting firms and internal audit functions (IAFs) responded by modifying their audit methodologies to incorporate a “business risk” approach to auditing. Exhibit 8-1 illustrates these changes in practice, which initiated changes in both internal and external auditing standards. The ensuing discussion is cursory; the interested reader is referred to *The Outsourcing Dilemma: What’s Best for Internal Auditing* (Rittenberg and Covalleski, 1997) and *Developments in the Audit Methodologies of Large Accounting Firms* (Lemon, Tatum, and Turley, 2000) for a more complete discussion of this evolution.

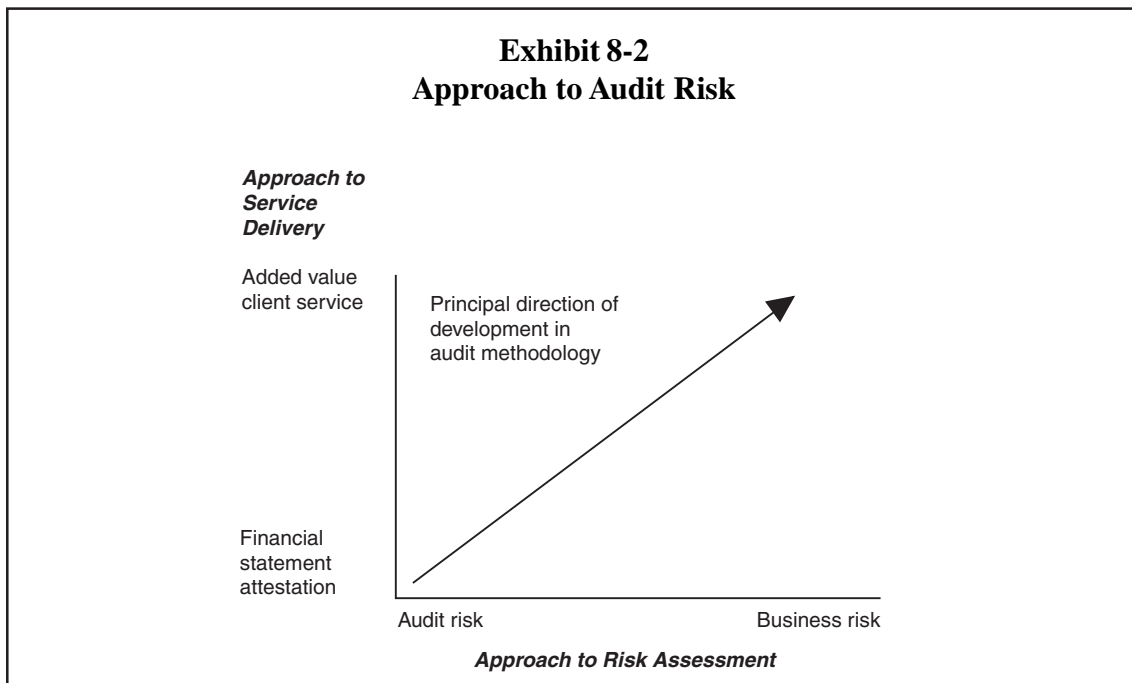


Source: *The Outsourcing Dilemma: What's Best for Internal Auditing* by Larry E. Rittenberg and Mark A. Covaleski, p. 51. Copyright 1997 by The IIA Research Foundation, 249 Maitland Avenue, Altamonte Springs, Florida 32701-4201, U.S.A. Reprinted with permission.

In 1997 The IIA appointed the Guidance Task Force to study the gap between evolving internal auditing practice and internal auditing standards to determine how existing standard-setting processes and guidance could be improved. The Guidance Task Force's key recommendations included revising the definition of internal auditing and creating a new professional practices framework (IIA, 1999a, 1). In June 1999 The IIA approved a new

definition of internal auditing that encompasses an expanded scope of services, embraces risk management, control, and governance processes, and emphasizes adding value to an organization. In December 2000 The IIA issued new *Standards* that elaborate on this “business risk” approach of internal auditing.

In 1998 Canada, the U.S., and the UK formed the Joint Working Group (JWG) to study the audit methodologies of the largest accounting firms. The JWG found that some firms’ methodologies required the auditor to understand the organization’s strategic objectives and the related risks and controls. This “business risk” approach emphasizes high-level controls (e.g., control environment factors such as the audit committee) and monitoring controls over business processes and relies on audit evidence that historically has been considered soft evidence (e.g., analytical procedures, inquiry, and observation). The accounting firms believed that this increased focus on “knowing the business” led to a more effective and efficient audit and, in turn, a more value-added service for their attest clients. Exhibit 8-2 illustrates this change in audit methodologies.



Source: *Developments in the Audit Methodologies of Large Accounting Firms* by W. Morley Lemon, Kay W. Tatum, and W. Stuart Turley, p. 11. Copyright 2000 by Professors W. Morley Lemon, Kay W. Tatum, and W. Stuart Turley. Reprinted with permission.

In 2000 the JWG issued a report that was distributed to the International Auditing and Assurance Standards Board (IAASB) (previously the International Auditing Practices Committee), and the auditing standard-setting bodies in Canada, the U.S., and the UK (JWG, 2000). The overall recommendation was that the IAASB should change existing international auditing standards to incorporate the “business risk” approach. At its September 2002 meeting, the IAASB voted to issue three exposure drafts of proposed auditing standards (commonly referred to as assessing risk, linkage, and audit evidence) that introduce many of the attributes of the “business risk” approach to auditing into the international auditing standards.

We believe that it is important to consider the changes from the perspective of both internal auditors and external auditors to understand how the internal auditing process has changed and is changing. Research about the external auditing process can be used as a platform for identifying research issues about the internal auditing process. For example, the JWG (2000) identified challenges in implementing the “business risk” approach including:

- Auditors may not possess the skills to understand certain aspects of business risks.
- Auditors may not have access to the databases that assist in the risk assessment process.
- Auditors of smaller organizations may believe that the audits of such organizations can be efficiently undertaken without a broad consideration of the organization's business risks.
- Regulators and others may perceive that an approach, which places increased reliance on analytical procedures and testing of high level controls, lacks rigor.

When the JWG conducted its study, there was little evidence to support the efficiency or the effectiveness of the “business risk” approach in external audits. While the firms believed that the “business risk” approach was a better way of performing audits, there was no evidence to support this assertion. Slowly, evidence is emerging (Ballou, Earley, and Rich, 2002; O'Donnell and Schultz, 2002; Eilifsen, Knechel, and Wallage, 2001). Similarly, research is needed regarding the implementation of the “business risk” approach to internal auditing that is articulated in the *Standards*, recognizing the unique aspects of internal auditing (e.g., organizational and staffing issues discussed in the ROIA chapter by Prawitt and independence and objectivity issues discussed in the ROIA chapter by Mutchler).

Research Questions

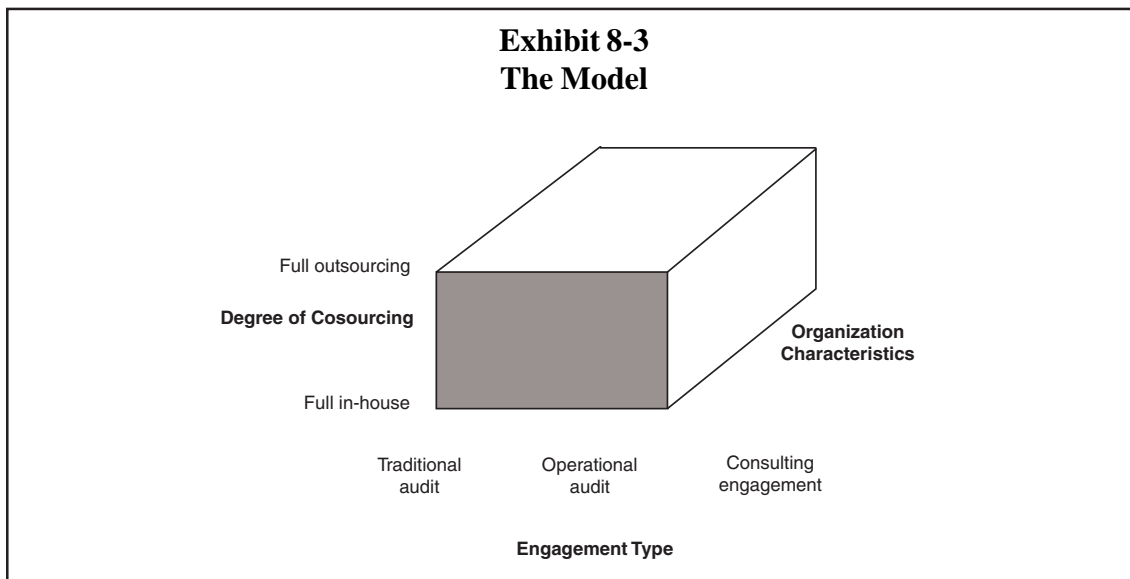
- Is the convergence suggested by Rittenberg and Covaleski in their 1997 report continuing or was it an artifact of the organizations they interviewed?
- What, if any, impact have recent financial debacles such as Enron and WorldCom had on changes in the internal auditing approach suggested by Rittenberg and Covaleski (1997)?
- Is the IAF moving in the same direction as Lemon, Tatum, and Turley suggested the external auditing profession was moving?

III. The Model

We believe that the context for the internal auditing process can best be envisioned if one thinks of the IAF as being a point in a three dimensional space. The three dimensions are:

- “Engagement Type.”
- “Degree of Cosourcing.”
- “Organization Characteristics.”

The model (see Exhibit 8-3) presents our view of the context in which all, or at least most, internal audits can be classified.



Engagement Type

Engagement type is a continuum ranging from an internal audit that consists completely of tests of controls which may also be described as a traditional, compliance, or tick-and-tie audit (**Traditional Audit** in our model) through an internal audit that consists completely of tests of operations/performance (**Operational Audit** in our model) to a consulting engagement (**Consulting Engagement** in our model). We understand that a **Traditional Audit** and an **Operational Audit** are almost always assurance engagements while a **Consulting Engagement** is simply that. There is a range of activities subsumed under the rubric “consulting.” These activities include but are not limited to (IIA, 2001a, Practice Advisory 1000.C1-2):

- Formal consulting engagements (e.g., planned and subject to a written engagement).
- Informal consulting engagements (e.g., participation on standing committees, limited-life projects).
- Special consulting engagements (e.g., participation on a merger and acquisition team or system conversion team).
- Emergency consulting engagements (e.g., participation on a team established for recovery or maintenance of operations after a disaster or a team assembled to supply temporary help to meet a special request).

Chapter 4 provides a continuum of internal audit activities, which the author (Anderson) calls the Assurance/Consulting Continuum. The continuum is a more detailed version of the “Engagement Type” continuum in our model. Anderson raises issues about assurance and consulting services that can be examined using the model as a context. For example, issues related to assurance services and consulting engagements could be considered in the context of degree of cosourcing and organization characteristics.

Cosourcing

Two principal groups provide internal auditing services to organizations: in-house providers (IPs) and outside providers (OPs). IPs include internal audit departments in public companies, private companies, government organizations, and not-for-profit organizations. OPs include organizations such as Deloitte & Touche LLP, Ernst & Young LLP, KPMG LLP, PricewaterhouseCoopers LLP, Jefferson Wells International Inc., and Protiviti (formed by former Andersen personnel), which provide outsourced internal auditing services. After a number of conversations with the practice leaders of the major OPs in Canada (as contrasted

with IPs), we believe that “degree of cosourcing” is important for a discussion of the internal audit process. OPs have a diversity of clients while IPs have only a single client. As discussed in the ROIA chapter by Anderson, both IPs and OPs have a wide diversity of potential auditees or clients within a given organization. However, the IP exists within a single organization while the OP serves multiple organizations. The range of cosourcing is from “full in-house” (0 percent cosourced) to “full outsourced” (100 percent cosourced). We have assumed that in all cases there is a director of internal audit or equivalent. Chapter 6 provides additional information about sourcing and other flexible staffing arrangements.

Organization Characteristics

Factors that exist in the organization’s external environment and other factors that are unique to the organization potentially can affect internal audit processes. We refer to these factors as “organization characteristics” and recognize that there are several possibilities for this dimension, including:

- Industry.
- Country.
- Legal environment.
- Size of organization.
- Organizational culture.
- Composite skill set of IAF.

Industry

We believe there is a series of discrete industry types within which there may be subtypes (for example, a discrete industry type might be Financial Services and subtypes might be Insurance and Banking). Our conversations with OPs led us to believe that while inter-organizational audits of the same industry type might be similar, we should leave that as a researchable question.

Country

As discussed earlier, globalization of business caused some IAFs to adopt a “business risk” approach to auditing. O’Regan (2001) identifies and discusses various issues (e.g., currency, political, cultural, and environmental) that the IAF should consider when auditing an organization in a country other than the organization’s domicile.

Legal Environment

The legal environment includes laws and regulations. For example, the Sarbanes-Oxley Act of 2002 prohibits the external auditor from performing certain activities, including internal audit outsourcing services. The law also requires chief executive officers (CEOs) and chief financial officers (CFOs) to certify the accuracy of the financial statements and external auditors to report on management's assessment of internal controls. At the time of this writing, the New York Stock Exchange (NYSE) has proposed that all companies be required to have a functioning IAF as a condition of listing. It is not clear how much if any cosourcing would be allowed under the proposed rule. These new laws and regulations likely will impact the type of internal audit engagements and the degree of cosourcing.

Size of Organization

The IAF exists in organizations that vary in size from small to large. Recall that the JWG suggested that the "business risk" approach might have to be modified for audits of small organizations. Carey, Simnett, and Tanewski (2000) found that outsourcing was the most common method for providing internal auditing services to family businesses.

Organizational Culture

What is the organization trying to achieve with the IAF? For example, does the organization view the IAF as existing to assist management in managing risk or does the organization view the IAF as existing simply to satisfy legal or regulatory constraints? What is the role of the IAF in the organization — management training for eventual placement in a management position in some other part of the organization or training for a career in internal auditing? For example, at General Electric internal audit serves as a Center of Excellence and a training ground for managers. At Caterpillar the IAF serves as an entry-level position for corporate accountants. The answers to the question would seem to impact on the type of engagement and the degree of cosourcing. Chapter 6 covers these issues more fully.

Composite Skill Set of IAF

There are a number of staffing and training issues discussed in Chapter 6 that could be examined using the model as a context. For example, the structure of the IAF or staffing the IAF could be considered in the context of engagement type and degree of cosourcing.

Research Questions

- Does the model reflect reality? Can internal auditing be so categorized? Do these three dimensions capture the necessary components of internal auditing's systematic, disciplined process?
- Assuming the model does reflect reality, do internal audits differ across all three dimensions? If so, how?
- Are there substantive differences between the engagements performed by internal and outside providers? Is the extent of cosourcing a factor?
- Is there a difference in engagement type across different industries?
- Do organizations migrate from a traditional audit to an operational audit and from an operational audit to a consulting engagement? If they do, what causes the migration?
- Do organizations migrate from an operational audit to a traditional audit? If they do, what causes the migration?
- Do organizations migrate along the cosource continuum? If so, what causes the migration?
- How are costs and benefits assessed both ex ante and ex poste in the decision to migrate to greater cosourcing?
- What is the role of organizational culture in determining: (a) Whether the IAF is performed by an internal or outside provider? (b) The degree of cosourcing if an outside provider is used? (c) Whether a traditional audit or operational audit or consulting engagement is appropriate?
- Is there a correlation between the level of cosourcing and the migration from traditional audit to operational audit to consulting engagement?
- What is the role (mandate) of internal auditing in the organization? Management training or internal audit? How does this role influence the degree of cosourcing and the engagement type?

- The New York Stock Exchange has proposed that all companies be required to have a functioning IAF as a condition of listing. What are the implications for degree of cosourcing and types of engagements?
- The Sarbanes-Oxley Act of 2002 prohibits the external auditor from performing certain activities, including internal audit outsourcing. What are the effects on outsourcing?

IV. Framework of an Engagement

The Introduction to the *Standards* (IIA, 2001b) states:

Internal audit activities are performed in diverse legal and cultural environments; within organizations that vary in purpose, size, and structure; and by persons within or outside the organization. These differences may affect the practice of internal auditing in each environment. However, compliance with the Standards is essential if the responsibilities of internal auditors are to be met.

Standards 2200, 2300, and 2400 set forth the basic requirements for planning and performing internal audits and communicating engagement results, thereby providing a framework of the internal audit process. As noted above, the differences among organizations' environments as well as the providers of internal audit activities influence individual engagements. We believe that these differences are captured by the three dimensions of the model (engagement type, degree of cosourcing, organization characteristics) introduced in the prior section. The potential impact of these differences is pointed out in the following discussion of the internal audit process.

Planning the Engagement

The *Standards* require the IAF to develop and document an engagement plan. This process involves considering objectives, risks, and controls to obtain knowledge about the activity being reviewed, setting engagement objectives based on a risk assessment, establishing an engagement scope that is sufficient to satisfy the engagement objectives, determining appropriate resources to achieve the objectives, and developing a work program that achieves the engagement objectives.

Planning Considerations

Standard 2201 introduces the “business risk” approach into the internal auditing process. The standard requires the IAF to obtain knowledge about the activity’s objectives, risks, and related controls. In addition, the IAF must evaluate the controls against a relevant control framework. The framework may be a recognized framework — for example, the COSO framework discussed in Chapter 2. Or, the framework may be organization specific. Burr, Gandara, and Robinson (2002) describe a unique control framework developed at Morgan Stanley. In addition, the IAF should consider opportunities for making significant improvement to the activity’s risk management and control systems. This consideration enables the IAF to add value to the organization. Lindow and Race (2002) report how Cal-Fed’s risk-based audit approach enabled the IAF to add value by improving the organization’s risk management strategies.

A technique that is often used in internal audits at the planning stage is control self-assessment (CSA). The IIA defines CSA as:

. . . a process through which internal control effectiveness is examined and assessed. The objective is to provide reasonable assurance that all business objectives will be met (IIA, 1998).

The distinguishing characteristic of CSA is that the IAF does not perform the assessment. Instead, managers and line employees evaluate controls. The IAF normally participates in the process as a facilitator. The IAF can use CSA to target audit work by reviewing high risk and unusual items noted in CSA results. In addition, the IAF can use CSA to increase the scope of coverage of internal control reporting during a given year.

The three basic formats of control-self assessment are workshops, questionnaires, and management-produced analysis (IIA, 1998). Organizations often use a combination of approaches. If an organization’s culture is supportive, The IIA recommends the workshop format (IIA, 1998). Other factors that determine the best approach include the nature of the industry, the expertise and experience of the IAF, the attitude and support of management for the IAF, and the attitude of the audit committee toward the IAF (Hubbard, 2000). Tritter and Zittnan (1996) studied the benefits and concerns associated with CSA from varying perspectives. Additional research is warranted.

Engagement Objectives

Standard 2210 states that the engagement's objectives should address the risks, controls, and governance processes associated with the activities under review. When planning an assurance engagement, the IAF should identify and assess risks relevant to the activity under review. Risk assessment assists the IAF in identifying significant areas of activity that should be examined (Practice Advisory 2210-1). Risk assessment activities include obtaining background information (e.g., objectives and goals), conducting a survey (e.g., discussions with client, interview with individuals affected by the activity, on-site observations) and reviewing management reports and studies (e.g., analytical auditing procedures, flowcharting) (Practice Advisory 2210.A1-1). The engagement's objectives should reflect the results of the risk assessment. On consulting engagements, the IAF and the client should agree upon the extent to which the engagement objectives will address risks, control, and governance processes. Chapter 5 provides a thorough discussion of risk from the perspective of the IAF.

When developing objectives for an assurance engagement, the IAF should specifically consider the probability of significant errors, fraud, noncompliance, and other exposures. Fraud includes an array of irregularities and illegal acts characterized by intentional deception. The principal mechanism for deterring fraud is control. Management has the primary responsibility for establishing and maintaining control and for establishing the overall tone and ethical standards within the organization. The IAF assists in the deterrence of fraud by examining and evaluating the internal control, commensurate with the extent of the potential exposure/risk in the various segments. Although the IAF is not expected to have the expertise of a person whose primary responsibility is detecting and investigating fraud, the IAF should have sufficient knowledge to identify the indicators of fraud (*Standard 1210*). See Chapter 4 for a further discussion of the role of the IAF with respect to fraud.

Church, McMillan, and Schneider (2001) investigated internal auditors' consideration of fraudulent financial reporting in an analytical procedures task. Their findings suggest a positive relationship between internal auditing experience and participants' beliefs about fraud. They suggest future research about how experience affects stores of knowledge and performance across internal auditing tasks. This research should focus on a homogeneous group — for example, internal auditors employed by financial institutions.

Engagement Scope

The IAF should determine that the scope of the engagement is sufficient to satisfy the objectives of the engagement (*Standard 2220*). For an assurance engagement, the scope should include consideration of relevant systems, records, personnel, and physical properties.

Although the IAF and the client jointly establish the objectives of a consulting engagement, the IAF should determine that the scope of the engagement is sufficient to satisfy the agreed-upon procedures. If the IAF believes that the scope is not adequate, the IAF should discuss the issue with the client to determine whether to continue with the engagement.

Anecdotal evidence suggests that recent laws and regulations (e.g., Sarbanes-Oxley Act of 2002, NYSE listing requirements, Nasdaq listing requirements) will impact the scope of assurance and consulting engagements. For example, one OP indicated that management and the chair of the audit committee of one client were debating the scope of an assurance engagement. While the audit committee chair was asking for expanded coverage of controls over financial reporting, management was resisting because of insufficient resources.

Engagement Resource Allocation

Standard 2230 states that internal auditors should determine and have access to appropriate resources to achieve engagement objectives. Staffing should be based on an evaluation of the nature and complexity of each engagement, time constraints, and available resources. The organization's audit methodologies can affect needed resources. For example, Lindow and Race (2002) reported that the effective implementation of a "business risk" approach required hiring personnel with diverse backgrounds. Similarly, techniques such as CSA require special skills (Hubbard, 2000).

Engagement Work Program

Standard 2240 requires the IAF to develop and document work programs that achieve the engagement objectives. Work programs for assurance engagements should include the procedures for identifying, analyzing, evaluating, and recording information during the engagement. On the other hand, the content of work programs for consulting engagements may vary depending upon the nature of the engagement.

The relationship between the auditor's risk assessments and planned audit procedures is an important practice issue. Research on external auditors does not fully support a correlation between risk assessments and audit plans (Zimbelman, 1997; Mock and Wright, 1999; Wright and Bedard, 2000). Research is needed to explore the relations between internal auditors' sensitivity to fraud risk factors and their subsequent performance of auditing procedures (Church, McMillan, and Schneider, 2001).

Research Questions

- Who does the risk assessment? Management or the IAF?
- If the auditor performs the risk assessment, does management review the assessment? Does the auditor have the authority to advise the audit committee/board of directors if there is a disagreement?
- Are there substantive differences between the risk assessment processes of internal and outside providers?
- Do they (management, inside providers, or outside providers) get it right?
- How is risk assessment translated into an audit plan?
- What does management/audit committee/board of directors do about findings?
- To what extent does control self-assessment improve the efficiency and effectiveness of an internal audit?
- Is control self-assessment appropriate for all internal audits? Some internal audits? If so, what kind (size, industry, degree of cosourcing)?
- To whom will the CEO and the CFO turn for help when required to certify the accuracy of the financial statements: the chief audit executive (also referred to as the director of internal audit), the chief accounting officer (or controller), or the external auditor? If the CAE, what is the impact on the type and scope of internal audit engagements?

Performing the Engagement

When performing the engagement, the IAF must identify, analyze, evaluate, and record sufficient information to achieve the engagement's objectives.

Identifying Information

Standard 2310 requires the IAF to identify information that is sufficient, reliable, relevant, and useful. Although Practice Advisory 2310-1 describes these attributes, the *Standards* do not mandate specific types of information. Instead, professional judgment plays a large role

in answering the questions about how much and what kind of information should be gathered and analyzed during the engagement.

One technique used to identify and examine information is analytical procedures. According to Practice Advisory 2310-1, the application of analytical auditing procedures for identifying information to be examined is based on the premise that, in the absence of known conditions to the contrary, relationships among information may reasonably be expected to exist and continue. Examples of contrary conditions include unusual or nonrecurring transactions or events; changes in the company's strategic focus; accounting, organizational, operational, environment, and technological changes; inefficiencies; ineffectiveness; and errors, fraud, or illegal acts.

Another technique that is useful in identifying information is data mining. Kusnierz and Livsey (1999a) explain that this process is used to "identify patterns in immense quantities of apparently random data." The investigator uses the patterns to assess whether there are anomalies in an activity (for example, an unusual number of returns from a particular customer or an unusual number of checks being issued to a particular supplier). Kusnierz and Livsey also discuss Benford's law and the work of Dr. Mark Nigini in using statistics to discover fraud (see the February 1999 issue of *Internal Auditor* for more discussion of this).

David and Steinbart (2000) used a mail survey to obtain information about the status of data warehousing and data mining in various organizations and the role played by internal auditors in their organization's data warehousing and data mining efforts. Survey results showed that internal auditors do not extensively use their organizations' data warehouses. Less than one-half of internal auditors who worked in an organization with a data warehouse indicated that they used those warehouses. However, the majority of those who use their organization's warehouse indicated that such use improved audit quality and reduced the time to complete an audit. An interesting research issue would be the investigation of the use of data mining by IAFs with a risk-based as opposed to a more traditional internal auditing methodology. When asked about the use of data mining, one OP responded that the use of data mining was a "bottom up" approach that is inconsistent with "top down" approach of risk-based auditing.

Research Questions

- What is the relationship between the nature and sufficiency of audit evidence and the type of engagement (assurance vs. consulting)? Organization characteristics (size, industry, IAF skill set)?
- What is the relationship between the nature and sufficiency of audit evidence and the IAF's audit methodology (traditional vs. "business risk")?

- What is the relationship between the nature and sufficiency of audit evidence and the type of the report? The recipient (auditee, board, audit committee, regulators, others outside the scope of the report)?
- What is the level of interaction between the IAF and the external audit function? Is that level of interaction impacted by the degree of cosourcing?

Analysis and Evaluation

Standard 2320 requires the IAF to base conclusions and engagement results on appropriate analyses and evaluations. Analytical procedures and benchmarking are tools that can be used to assist the auditor in performing analyses.

According to Practice Advisory 2320-1, analytical auditing procedures should be used during the engagement to examine and evaluate information to support engagement results. The Practice Advisory provides six factors that the IAF should consider in determining the extent to which analytical procedures should be used. After evaluating these factors, the IAF should consider and use additional audit procedures based on the findings from the analytical procedures.

In understanding the use of benchmarking, several definitions of benchmarking are helpful:

- Simons (2000): "A technique used to calibrate an organization's efforts against a 'best of class' yardstick."
- Merchant (1998): "A process in which an organization studies other organizations' best practices and implements processes and systems to enhance its own performance."
- The Canadian Institute of Chartered Accountants (CICA): "Benchmarking is the established baseline for capturing performance measures relevant to ...processes, systems, and organizations."

Simons discusses benchmarking as a method for comparing performance of an organization against performance by other like organizations as a way of enhancing understanding of that organization's performance. Care must be taken that similar information is being compared. It is important to understand the results of the benchmarking and properly use that information. Simply collecting it is not enough.

Merchant suggests that many aspects of an organization's operations can be benchmarked against those of other organizations. He indicates that some companies gather their own

benchmarking data while others form cooperative ventures and share data. The CICA has a partnership with several organizations that provide benchmarking data that allows members to access worldwide databases and benchmark more than 60 business processes. In our meetings with the practice leaders of the Big 4 accounting firms in Canada, several firms reported that they use benchmarking as a way of assessing a client's performance. One firm reported that they had invested heavily in a very large benchmarking database for so doing.

Whether benchmarking is used more in assurance or consulting engagements is an interesting question. Richards (2001) reports that from the IAF's perspective, consulting assignments provide many potential benefits, including greater use of benchmarking.

Research Questions

- What types of procedures (analytical procedures; data mining; nonfinancial measures—quantitative, qualitative) lead to efficient/effective auditing?
- To what extent does benchmarking improve the efficiency and effectiveness of an internal audit?
- Is benchmarking appropriate for all internal audits (traditional audit, operational audit, consulting engagement)? Some internal audits? If so, what kind (size, industry, degree of cosourcing)?
- To what extent does data mining improve the efficiency and effectiveness of an internal audit?
- Is data mining appropriate for all internal audits? Some internal audits? If so, what kind (size, industry, degree of cosourcing)?
- What is the role of judgment recognizing the varying perspectives (i.e., short-term vs. career and diverse background vs. traditional external audit background) for internal auditors?

Recording Information

According to *Standard 2330*, the IAF should record relevant information to support the conclusions and engagement results. The *Standards* require the chief audit executive to develop policies governing the retention of engagement records. This requirement is applicable to both assurance and consulting engagements. An interesting research question

is what is the impact of Sarbanes-Oxley on the IAF's document retention requirements? Sarbanes-Oxley requires that external auditors retain documents for seven years, but does not address internal auditors.

The *Standards* do not mandate specific types of documentation. Practice Advisory 2330-1 recognizes that the organization, design, and content of engagement working papers depend on the nature of the engagement and requires the chief audit executive to establish documentation policies for the various types of engagements performed. How the documentation requirements for an assurance versus a consulting engagement differ could be investigated.

Research Questions

- What is the relationship between types of evidence and documentation?
- What is sufficient documentation?
- Is the type of documentation different for assurance versus consulting engagements?
- Is the type of documentation different for inside providers versus outside providers?

Engagement Supervision

Engagements should be properly supervised to ensure objectives are achieved, quality is assured, and staff is developed (*Standard 2340*). Although the chief audit executive has overall responsibility for review, experienced internal auditors may review the work of other less experienced internal auditors (Practice Advisory 2340-1). A fruitful area of research is the relationship between internal auditor characteristics (e.g., experience, background) and the effectiveness of the review process. Research shows a significant relationship between reviewer characteristics and review efficiency and effectiveness (Ballou, 2001; Bamber and Ramsay, 2000). See also Chapter 6 of this monograph for a discussion of controlling the IAF.

Research Questions

- Who is doing the supervision?
- What is the role of the chief audit executive — figurehead, follow up?

- Is the level and quality of supervision impacted by the organizational reporting structure of the IAF (e.g., is supervision different when IAF reports to the audit committee vs. when it reports to management)?
- Is the role of chief audit executive outsourced? If the engagement is cosourced 100 percent, to whom does the IAF report?

Communicating the Engagement Results

The *Standards* require the IAF to communicate engagement results promptly. The *Standards* set threshold requirements regarding the criteria for communications, the quality of communications, disclosure of noncompliance with the *Standards*, disseminating results, and monitoring progress. The form and content of communications vary among organizations and even within an organization. See Chapter 6 for a discussion of communication issues related to staffing and managing the IAF.

Criteria for Communicating

Standard 2410 states that communications should include certain criteria (the engagement's objectives, scope, and applicable conclusions, recommendations, and action plans). They do not prescribe or proscribe a standard format. Factors that determine format include the type of service (e.g., assurance, consulting), the nature of the activity reviewed (e.g., financial, nonfinancial), the kind of report (e.g., oral or written, interim or final, opinion or no opinion), and the recipient of the report (e.g., operational management, senior management, audit committee). Sawyer (1996) and Cutler (2001) provide valuable guidance about designing reports.

Because the objectives of an assurance engagement are different from the objectives of a consulting engagement, the format of a report for an assurance engagement will be different from the format of a report for a consulting engagement. Cutler (2001) predicted that consulting reports will become more common in response to The IIA's new *Standards* and provided an overview of the standard components of a report for consulting engagements.

The *Standards* permit both written communications (reports) and oral communications (briefings). For example, the IAF may issue reports for assurance engagements, but use briefings for consulting engagements. Briefings may be supplemented with visual aids such as PowerPoint slides. Raam and Morgan (2001) discuss various communication tools, including two types of reports — letter and chapter reports — as well as briefings.

Audit results (i.e., findings, issues) are a key component of audit communications. There are different ways to present the key issues. Hubbard (2001) describes two approaches. The five-attributes approach covers five points — criteria, condition, cause, effect, and recommendation. The risk-based approach responds to the current trend of “business risk” auditing.

Who the IAF reports to can influence the form and content of the audit report. For example, in the 1990s, Whirlpool redesigned its audit reports to incorporate a user focus. The reports were divided into three sections: executive summary, key issues, and other opportunities. The key issues and the executive summary sections were distributed to senior management. Functional management received all three sections (Gray and Gray 1996, 135).

Research Questions

- Should the IAF have to render an audit opinion?
- What is the potential effectiveness of internal auditor reports vs. external audit reports? As an example, there has been increased demand for internal auditors to provide assurances on the reliability of systems used for processing data for third parties because the third-party users do not find significant value in the typical SAS No. 70 review performance by CPAs.
- Another example is the requirement of management under Sarbanes-Oxley to report on internal control. What role does/can the IAF play in aiding management in fulfilling its legal responsibility?

Quality of Communications

Standard 2420 requires that the communications meet various elements of quality (accurate, objective, clear, concise, constructive, complete, timely). The IAF uses a variety of tools (e.g., narrative, symbols, exhibits, tables, and pictures) to achieve “quality” communications. For example, some IAFs use the stoplight icon method for organizing the report and highlighting critical areas of risk. Within the report, a traffic light symbol accompanies the summary write-up of each audit area. Under this method, a green light indicates that an area is acceptably controlled, a yellow light suggests that minor improvements are needed, and a red light draws attention to risks that are unacceptably controlled (IIA www.theiia.org/ecm/printfriendly.cfm?doc_id=1493).

As part of their total quality management (TQM) efforts in the 1990s, some companies improved the quality of their communications. Southern California Edison Company implemented a quality evaluation form for draft audit reports. Audit managers used the form to rate the quality of 12 attributes of draft audit reports. After three years, managers reported that the quality of outgoing reports was steadily improving (Gray and Gray, 1996, 101). TRW Inc. revamped its audit report processes as well. As a result, the average time between the exit conference and the final audit report dropped from 88 days to five days (Gray and Gray, 1996, 135).

What constitutes quality communications may change over time. According to Cutler (2001), “. . . if you’re still using the same report that you were using five years ago, chances are you’re providing more information than your readers want. You’ve got to look at conveying messages without overloading the readers with information.”

Globalization can affect the quality of communications. For example, after Whirlpool expanded operations into foreign countries, the IAF found it necessary to change its five opinion categories (excellent, good, satisfactory except for, unsatisfactory, and unacceptable). The IAF found that the labels for the categories carried different meanings in different cultures. That is, an “unacceptable” rating in an Asian environment was interpreted quite differently from that same rating in a Western environment. As a result, the IAF changed to three opinion categories (meets Whirlpool’s expected design, requires improvement to meet Whirlpool’s expected design, needs immediate attention) (Gray and Gray, 1996, 135).

Noncompliance with the Standards

IAFs are encouraged to report that their activities are “conducted in accordance with the *Standards for the Professional Practice of Internal Auditing*” (*Standard 1330*). If the IAF does not comply with the *Standards* on a particular engagement, the *Standards* require the communications disclose the standard not achieved, the reason for noncompliance, and the impact of noncompliance (*Standard 2430*).

Research Questions

- Are internal auditor reports oral or written? What factors determine whether the report is oral or written?
- How can the IAF more effectively communicate?
- Does including the auditee’s responses to findings in the final communication have an effect on the extent to which the auditee responds to the findings?

Disseminating Results

Technology has impacted and will continue to impact the dissemination of audit results. For example, in the 1990s Southern New England Telecommunications' IAF began providing weekly updates by voice mail and written feedback through a matrix, rather than relying on the audit report as the primary means of communications with management (Gray and Gray, 1996). Cutler (2001) predicts that more reports will be delivered electronically or through a Web interface and that audit reporting will increasingly incorporate multimedia approaches.

Research Questions

- To whom does the IAF (internal or outsourced) report?
- Does the IAF report to/have a line of communication to the audit committee?
- Is there follow-up? If so, to whom are results of follow-up reported?
- Does the fact that some or all of the audit is cosourced affect the extent of follow-up?
- Does the type of engagement affect the extent of follow-up?

V. Summary

The chapter considers the IAF process in the context of changes that are taking place in the audit approach, the focus on knowledge of the business, and the business risks facing the organization of both internal and external auditors. Next, a model for considering the IAF in a three-dimensional space (engagement type, degree of cosourcing, and organization characteristic) is suggested as a structure for analyzing the IAF process. Finally, the internal audit process — planning the engagement, performing the engagement, and communicating the engagement results — is discussed. Appendix I summarizes the research questions suggested based on the material in the chapter. We believe that research designed to answer these questions and extensions of them will allow the practice of internal auditing to move forward.

VI. Appendix I: Chapter Research Questions

Recent Changes in Internal and External Auditing

- Is the convergence suggested by Rittenberg and Covaleski in their 1997 report continuing or was it an artifact of the organizations they interviewed?
- What, if any, impact have recent financial debacles such as Enron and WorldCom had on changes in the internal auditing approach suggested by Rittenberg and Covaleski?
- Is the IAF moving in the same direction as Lemon, Tatum, and Turley suggested the external auditing profession was moving?

The Model

- Does the model reflect reality? Can internal auditing be so categorized? Do these three dimensions capture the necessary components for a discussion of internal auditing's systematic, disciplined process?
- Assuming the model does reflect reality, do internal audits differ across all three dimensions? If so, how?
- Are there substantive differences between the engagements performed by internal and outside providers? Is the extent of cosourcing a factor?
- Is there a difference in engagement type across different industries?
- Do organizations migrate from a traditional audit to an operational audit and from an operational audit to a consulting engagement? If they do, what causes the migration?
- Do organizations migrate from an operational audit to a traditional audit? If they do, what causes the migration?
- Do organizations migrate along the cosource continuum? If so, what causes the migration?
- How are costs and benefits assessed both ex ante and ex poste in the decision to migrate to greater cosourcing?

- What is the role of organizational culture in determining: (a) Whether the IAF is performed by an internal or outside provider? (b) The degree of cosourcing if an outside provider is used? (c) Whether a traditional audit or operational audit or consulting engagement is appropriate?
- Is there a correlation between the level of cosourcing and the migration from traditional audit to operational audit to consulting engagement?
- What is the role (mandate) of internal auditing in the organization? Management training or internal auditing. How does this role influence the degree of cosourcing and the engagement type?
- The New York Stock Exchange has proposed that all companies be required to have a functioning IAF as a condition of listing. What are the implications for degree of cosourcing and types of engagements?
- The Sarbanes-Oxley Act of 2002 prohibits the external auditor from performing certain activities, including internal audit outsourcing. What are the effects on outsourcing?

Planning the Engagement

- Who does the risk assessment? Management or the IAF?
- If the auditor performs the risk assessment, does management review the assessment? Does the auditor have the authority to advise the audit committee/board of directors if there is a disagreement?
- Are there substantive differences between the risk assessment processes of internal and outside providers?
- Do they (management, inside providers, or outside providers) get it right?
- How is risk assessment translated into an audit plan?
- What does management/audit committee/board of directors do about findings?

- To what extent does control self-assessment improve the efficiency and effectiveness of an internal audit?
- Is control self-assessment appropriate for all internal audits? Some internal audits? If so, what kind (size, industry, degree of cosourcing)?
- To whom will the CEO and the CFO turn for help when required to certify the accuracy of the financial statements — the chief audit executive (also referred to as the director of internal audit), the chief accounting officer (or controller), or the external auditor? If the CAE, what is the impact on the type and scope of internal audit engagements?

Performing the Engagement: Identifying Information

- What is the relationship between the nature and sufficiency of audit evidence and the type of engagement (assurance vs. consulting)? Organization characteristics (size, industry, IAF skill set)?
- What is the relationship between the nature and sufficiency of audit evidence and the IAF's audit methodology (traditional vs. "business risk")?
- What is the relationship between the nature and sufficiency of audit evidence and the type of the report? The recipient (auditee, board, audit committee, regulators, others outside the scope of the report)?
- What is the level of interaction between the IAF and the external audit function? Is that level of interaction impacted by the degree of cosourcing?

Performing the Engagement: Analysis and Evaluation

- What types of procedures (analytical procedures, data mining, nonfinancial measures-quantitative, qualitative) lead to efficient/effective auditing?
- To what extent does benchmarking improve the efficiency and effectiveness of an internal audit?
- Is benchmarking appropriate for all internal audits (traditional audit, operational audit, consulting engagement)? Some internal audits? If so, what kind (size, industry, degree of cosourcing)?

- To what extent does data mining improve the efficiency and effectiveness of an internal audit?
- Is data mining appropriate for all internal audits? Some internal audits? If so, what kind (size, industry, degree of cosourcing)?
- What is the role of judgment recognizing the varying perspectives (i.e., short-term vs. career and diverse background vs. traditional external audit background) for internal auditors?

Performing the Engagement: Recording Information

- What is the relationship between types of evidence and documentation?
- What is sufficient documentation?
- Is the type of documentation different for assurance versus consulting engagements?
- Is the type of documentation different for inside providers versus outside providers?

Performing the Engagement: Engagement Supervision

- Who is doing the supervision?
- What is the role of the chief audit executive — figurehead, follow-up?
- Is the level and quality of supervision impacted by the organizational reporting structure of the IAF (e.g., is supervision different when IAF reports to the audit committee vs. when it reports to management)?
- Is the role of chief audit executive outsourced? If the engagement is cosourced 100 percent, to whom does the IAF report?

Communicating Engagement Results: Criteria for Communicating

- Should the IAF have to render an audit opinion?
- What is the potential effectiveness of internal auditor reports vs. external audit reports? As an example, there has been increased demand for internal auditors to provide assurances on the reliability of systems used for processing data for third parties because the third-party users do not find significant value in the typical SAS No. 70 review performance by CPAs.
- Another example is the requirement of management under Sarbanes-Oxley to report on internal control. What role does/can the IAF play in aiding management in fulfilling its legal responsibility?

Communicating Engagement Results: Quality of Communications

- Are internal auditor reports oral or written? What factors determine whether the report is oral or written?
- How can the IAF more effectively communicate?
- Does including the auditee's responses to findings in the final communication have an effect on the extent to which the auditee responds to the findings?

Communicating Engagement Results: Disseminating Results and Monitoring

- To whom does the IAF (internal or outsourced) report?
- Does the IAF report to/have a line of communication to the audit committee?
- Is there follow-up? If so, to whom are results of follow-up reported?
- Does the fact that some or all of the audit is cosourced effect the extent of follow-up?
- Does the type of engagement affect the extent of follow-up?

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CHAPTER 9

THE PERVASIVE IMPACT OF INFORMATION TECHNOLOGY ON INTERNAL AUDITING

Sridhar Ramamoorti¹
Marcia L. Weidenmier

¹The views expressed in this ROIA supplemental chapter are the personal views of Dr. Sridhar Ramamoorti and do not necessarily reflect the views of, nor endorsement by, Ernst & Young LLP.

Dedicated to the memory of William G. Bishop III, CIA
President, The Institute of Internal Auditors, 1992-2004

The Institute of Internal Auditors Research Foundation

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I. Introduction

The impetus for this supplemental chapter titled *The Pervasive Impact of Information Technology on Internal Auditing* comes from The Institute of Internal Auditors Research Foundation (IIARF) monograph, *Research Opportunities in Internal Auditing* (2003), hereafter ROIA. ROIA combines theory and practice in conceptual frameworks to promote an understanding of the contemporary internal auditing environment.¹ The goals of ROIA include stimulating academic research on significant internal auditing topics and serving as a “communication bridge” between academics and practicing professionals. ROIA provided us with internal auditing related subject matter content, including the most promising areas of information technology² (IT) application in internal auditing.

One significant topic that is only briefly mentioned in ROIA is the impact of IT on the internal audit function.³ IT is revolutionizing the nature and scope of worldwide communications, changing business processes, and erasing the traditional boundaries of the organization — internally between departments and externally with suppliers and customers. The resulting intra-enterprise coordination as well as inter-enterprise integration with external business partners through supply chain management and customer relationship management systems demonstrates the power of IT as both a driver and enabler of management processes and strategies. Indeed, internal auditors must recognize and leverage the powerful capabilities of computers and technology in collecting, generating, and evaluating information for managerial decision making related to strategy, risk management and controls, and, more broadly, for effective organizational governance. At the same time, internal auditors must recognize that IT, in itself, will not increase the function’s effectiveness. Rather internal auditors must first understand the audit objectives and select appropriate IT to achieve those objectives (i.e., the task-technology fit is essential). It is also imperative that internal auditors understand their organization’s appropriate leveraging of IT, and learn to harness additional IT to optimize internal audit performance.

Another recent monograph, *Researching Accounting as an Information Systems Discipline*, published by the Information Systems Section of the American Accounting Association and co-edited by Arnold and Sutton (2002), has also served as a key reference. *Researching Accounting as an Information Systems Discipline*, hereafter RAISD, provides a framework for and a synthesis of the extant and rapidly evolving accounting information systems (AIS) research.⁴ RAISD was compiled for stimulating research in accounting and information systems among AIS researchers, as well as non-AIS researchers.

We draw upon ROIA to identify the nature, purpose, scope and contributions of the internal audit function in contemporary organizations. We also look to RAISD for providing us with

the overall philosophy and methodology of AIS research as well as promising avenues for exploring external and internal auditing applications. For ready reference, we have provided the topical content and sequence of chapters appearing in RAISD as well as ROIA in Table 1. In addition, to help identify current technology issues we have incorporated the top 10 technology issues as identified by The IIA's Advanced Technology Committee in December 2003 and The IIA's Strategic Directive regarding the top 30 IT issues identified in March 2003 (see Table 2).

We have written this supplemental chapter in a way that should help:

- Interested researchers better understand, evaluate, and enhance the context of internal auditing, including why IT is important to internal auditing and how internal auditors (may) generate and use IT in innovative ways that provide added value to their respective organizations; and
- Practicing internal auditors recognize, appreciate, and articulate the conceptual frameworks used in research to convey the strategic nature and relevance of their professional activities to those charged with governance within organizations.

Given this backdrop, whenever possible, we incorporate a discussion of pertinent topics included in ROIA and RAISD. To ensure that this chapter is tightly coupled with the original ROIA, we discuss the current and future impact of IT on the internal audit function relative to each ROIA chapter. In Section II (history, evolution, and prospects), we assess how IT has affected internal auditing in the past and, looking forward, how we expect it will likely continue to shape internal auditing in the future. Section III (organizational governance) describes how IT has helped create a demand for better corporate governance ("IT as driver" perspective) and provides the auditor with tools to meet that demand ("IT as enabler" perspective). Section IV (assurance and consulting) discusses the impact of IT on the different types of activities performed by the internal audit function. In section V (risk management) we discuss how IT changes the business environment and concomitantly business risks, as well as how the internal auditor helps management identify, assess, monitor, and manage these risks. Section VI (managing the internal audit function) examines how IT has influenced and, perhaps, altered the strategic positioning, scope, focus, and management of the internal audit function. In Section VII (independence and objectivity), we discuss the independence/ethical, as well as privacy, and security issues created by IT. Section VIII (systematic processes) explores how IT assists the systematic processes of internal auditors through the use of decision aids and knowledge management. Also, following the approach taken in other ROIA chapters, we identify numerous research questions at the end of each section to stimulate academic research related to IT and internal auditing. Readers may find it helpful to review the table of contents of the original ROIA and RAISD monographs (see Table 1).

A glossary of selected IT-related terms appears in the Appendix (these terms are identified by *italics and underscoring* the first time a technical term is used).

Two Important Caveats

During the process of writing this supplemental chapter, we noted that auditing research, including IT auditing research, has traditionally focused on the environment, scope, methodology, processes, and issues of **external** auditing. Researchers must exercise caution before attempting to generalize the results of external auditor/IT research to internal auditors and their settings. Future research can determine the specific circumstances under which external auditors and internal auditors perform/react similarly (or differently). To assist with this effort, research questions focusing on the differences between internal and external auditors are highlighted with a ♣ at the end of each section.

Secondly, it is important to recognize that internal audit functions may either be fully in-sourced, co-sourced, or fully outsourced. Each configuration affects the relationship between the internal audit function, the organization, and IT scope, budget, tools, and usage differently. In this supplemental chapter, we have primarily benchmarked on fully in-sourced internal audit functions that are substantially affected by the organization's use of IT. It is conceivable that the IT impact may be of a different kind or degree when contemplating a co-sourced or fully outsourced internal audit function (e.g., staffing and size of the internal audit function).

II. Historical Perspective on Information Technology and the Internal Audit Function⁵

To understand the impact of IT on the internal audit function, we first provide a historical perspective of how IT has developed over the last several decades from simple data input systems to complex management IS that support managerial decision making with relevant, reliable, and timely information. Chapter 1 of RAISD (Arnold and Sutton, RAISD, 2002) characterizes this evolution as a shift from automated systems performing only accounting functions (payroll, accounts payable, general ledger, etc.) to IS that perform enterprise-wide tasks that include accounting and auditing.

We begin our discussion in the 1950s that marked the dawn of the era of computers and technology in business. We describe how these IT developments caused the internal auditing function to (1) change the audit scope and approach, (2) use new auditing tools/techniques, and (3) execute operational audits of the entire organization. Specifically, we chronicle the

history and evolution of IT usage by internal auditors over the last four decades and outline emerging trends at the beginning of the 21st century.

1950s and 1960s

In the mid-1950s, the computer was first used to process business applications, with punched cards being used for data storage and batch processing. This “new” technology did not, initially, exert much of an impact on internal auditing. Rather, internal auditors generally followed an “auditing around the computer” approach because, relative to inputs and outputs, punched cards provided a visible and readable paper audit trail. Specifically, the auditor compared the machine’s input with its output (parallel processing), just as he/she had compared the voucher files with the ledger books in the early 1900s.⁶

Over the next decade, as computers became increasingly faster and more versatile, tape drives replaced punched cards, and real-time online systems were introduced. These new systems threatened the existence of the paper audit trail, transforming it to a nonvisual, electronically stored format. At the same time, computer use within organizations proliferated. In fact, by the mid-1960s, over 50 percent of the top 500 industrial companies had extensive electronic data processing operations (Hafner, 1964). Specifically, in order to make information flow about manufacturing processes more efficient, several companies introduced Materials Requirements Planning (MRP) systems in the 1960s, and continued to refine them into the future (CICA, 2003b).

Beyond computer usage for payroll processing and other fairly pedestrian business applications, perhaps inspired by the impressive utility of the 10-key calculator, internal auditors also began to recognize that the computer could be used as an auditing tool. Consequently, they first began experimenting with sampling applications, which required complex calculations (Sandler, 1968; Will, 1975). The most popular and economical method for testing the system was a test deck (or test data). However, auditors also began developing a variety of new computer programs, called generalized audit software (GAS), to assist with audit tasks and verify the results of processing, e.g., testing mathematical accuracy, comparing files, and summarizing data.

Nevertheless, internal auditors only *slowly* realized that they needed to be technologically proficient and, perhaps, adopt new approaches (Hafner, 1964, p. 979, emphasis added). The notion of relinquishing the “black box” approach (i.e., looking at inputs and outputs but ignoring the processing) and instead, “auditing through the computer,” required an intimate understanding of the logic behind computer operations, code review, as well as other sophisticated approaches for verifying general controls, application controls, and processing results.

Just as the extent of computer usage varied widely across organizations, the function, approach, and responsibility of the internal audit function also varied widely. More progressive organizations staffed audit functions with people trained in both auditing and IS to execute this new audit approach. For example, by 1968, Bell Laboratories had over 60 electronic data processing (EDP) auditors whose primary responsibilities were to: (1) develop new computerized audit techniques, (2) recommend and evaluate internal control procedures, and (3) evaluate controls over system testing and conversion (Wasserman, 1969). They also became involved in system design, disaster recovery plans, and other activities pertinent to systems installation and functioning. Some people, however, opposed internal auditors' participation in systems development (to provide controls expertise), claiming that it compromised the auditor's independence — a controversy that continues to be debated today.

In addition to changing the scope, approach, and techniques, IT also expanded the role of the internal auditor in the organization beyond just handling routine accounting transactions. While computers initially processed limited pockets of data, computers gradually processed data throughout the entire organization. This expansion of the computer's role created a demand for internal auditors to perform operational or management audits to ensure that management's policies were being carried out efficiently and effectively throughout the organization, making the internal audit function an integral part of management's controls over operational departments.

1970s and 1980s

By 1975, no less than 200,000 mainframe computers were in use in businesses (Peat, Marwick, Mitchell and Co., 1976), although they were concentrated in larger organizations. Moreover, Materials Requirement Planning (MRP) systems entered their second generation as MRP-II (Manufacturing Resource Planning), used to plan and control all of an enterprise's manufacturing processes and resources, during the 1980s (CICA, 2003b). Nevertheless, EDP audit functions were not universal and most internal audit functions did not perform EDP-related audits during the 1970s and early 1980s (Reilly and Lee, 1981). Internal audit functions were relatively slow in adopting the numerous "auditing through the computer" methods then in vogue: the *integrated test facility*, *tagging and tracing*, *mapping*, *parallel simulation*, *concurrent processing*, *controlled processing* or *reprocessing*, *program code checking*, and *flowchart verification* (Cash, Bailey, and Whinston, 1977). For example, a 1977 survey of internal audit managers revealed that, on average, test data was used less than 35 percent of the time and integrated test facilities less than 20 percent of the time (Rittenberg and Davis, 1977).

The slow adoption of EDP-related (internal) audit techniques from the 1960s through the 1980s may be potentially explained by the high level of technical skills required to implement audit procedures. Specifically, data and auditing tools existed only on mainframe and minicomputers (Coderre, 2001a, p. 134). To complicate matters further, a plethora of over 25 different proprietary GAS packages with different program languages, commands, functions, hardware, and input file formats were available for use by auditors (Adams and Mullarkey, 1972). Given these hurdles, organizations may also have decided that heavy investments in these audit techniques were not warranted.

Fortunately, with the passage of time, EDP-related audit techniques became more user-friendly and easier to implement. Organizations began moving from mainframe computers to personal computers (PC), making access to data easier. Proprietary GAS programs were eventually superseded by truly “generalized” audit software programs, like *ACL* (in the 1970s) and *IDEA* (in the 1980s), which work on multiple platforms and input file formats using audit specific language. During the 1970s, usage of GAS gained a powerful boost after the first major management fraud using a computer was perpetrated by the Equity Funding Corporation of America (“Billion Dollar Bubble”). This fraud was a catalyst for providing auditors with their own audit software, unrestricted access to data, and the responsibility to conduct data center and application system audits. During the 1980s, usage of GAS gained a second powerful boost when GAS could run on PCs, allowing analysis of data to take place virtually any time and place.

1990s and Beyond

In the 1990s, the global economy was at the cusp of entering the 21st century Information (Technology) Age. Technology was quickly recognized as an indispensable adjunct to information creation and collection, analysis, and dissemination. IT was also seen as the key enabler as well as driver of business strategy, particularly so because many “technological advances are almost immediately transferable across product markets and countries” (Bryan and Farrell, 1996). Organizations began implementing Enterprise Resource Planning (ERP) systems to manage all of an enterprise’s internal processes (e.g., sales, procurement, human resources, finance and accounting, production, distribution, and quality control (CICA, 2003b). Sophisticated management information and executive decision support systems based on electronic document management systems, data warehouses, and intranets, allowing for internal sharing and analysis of information, also emerged. Organizational boundaries became blurred and the extended enterprise became a reality. Inter-enterprise integration necessitated alignment of technology platforms with trading partners (e.g., *electronic data interchange*, *electronic funds transfer at point of sale*) as exemplified by customer relationship management (CRM) and supply chain management (SCM) initiatives. As we have progressed

from using telegrams and telexes, to phone systems and fax transmissions, to e-mail, video conferencing, and interactive cable, and now to Internet webcasts and virtual presentations, it has become easier and easier to transfer “working knowledge,” ideas, and techniques (Bryan and Farrell, 1996; Davenport and Prusak, 1998). The advent of global communications using the World Wide Web caused Larry Ellison of Oracle to make the sweeping, now-clichéd observation: “The Internet changes everything.”

Recent surveys reveal that the impact of IT on the internal auditing profession is marked, and The IIA continues to lead the way in equipping the profession with technology-related publications and guidance. The IIA’s influential reports on *Systems Auditability and Control (SAC)*, 1977, were updated to reflect the increasingly “electronic” environment and released as eSAC. Almost 49 percent of internal auditors have integrated IT into all of their reviews, and 76 percent expect non-EDP auditors to have computer knowledge beyond basic competence in using the spreadsheet (IIA, 2002b). The percentage of EDP auditors to total internal auditors has increased to between 14 percent and 24 percent (Hermanson et al., 2000; IIA, 2000), and this percentage is far higher in technology intensive companies such as Intel, Microsoft, and AT&T. Regarding sophisticated IT tools, which could potentially increase their efficiency and effectiveness, a large proportion of internal auditors use GAS to extract and analyze data (83 percent) (McCollum and Salierno, 2003). Almost 38 and 29 percent of internal auditors utilize continuous monitoring and continuous auditing technology, respectively (IIA, 2002a, AICPA/CICA, 1999). At the same time the expansion of internal audit’s function in organizations, including sophisticated IT usage, which began in the 1960s, continues.⁷

Table 3 presents a summary of the changes that occurred in IT and the (internal) audit function. For completeness, the table also includes the evolution of IT audit and topics that will be discussed in subsequent sections of this chapter.

Research Questions

- Given the historical reluctance to embrace IT, what are some ways to increase the rate of adoption of new IT audit techniques by internal auditors?
- Which of the IT audit applications described in this section deserved to be adopted? What are the differences, similarities, and objectives of each IT audit application?
- Which IT audit application is the best method to achieve efficiency, effectiveness, and/or a given objective? How do internal and external factors affect the choice of the appropriate IT audit application?

- What internal and external factors drive the adoption of IT by the internal audit function (e.g., organization's commitment to IT, IT's role in the organization's strategy, risk associated with the firm's IT)?
- What is the appropriate level of technological knowledge for EDP/IT auditors and non-EDP/IT auditors? How can internal auditor technology skills be enhanced?
- What internal and external factors drive the level of technological knowledge of EDP/IT auditors and non-EDP/IT auditors (e.g., size of the internal audit function, organization's commitment to IT, IT's role in the organization)?
- What is the most effective mix of EDP/IT and non-EDP/IT auditors in an internal audit department? What are the internal and external factors that should drive the mix of EDP/IT and non-EDP/IT auditors in an internal audit department?
- Does participation in systems development compromise the independence of internal auditors?
- ❖ How does the rate of adoption of new IT by internal auditors compare to that of external auditors? Have internal and external auditors adapted to the impact of IT at the same rate (and time frame)? If not, why not?
- ❖ Over the years, which internal auditor (and/or external auditor) technology applications have endured? Why — ease of use, inexpensive, scope of application, mission critical nature? What trends appear to be emerging about future IT applications? By internal auditors? By external auditors?

III. Corporate Governance

ROIA devotes two chapters to corporate governance and the role of the internal audit function. The chapters define corporate governance as the “structure through which objectives are set, and how these are achieved, and monitored” (Ruud, ROIA, p. 74). ROIA also identifies three key factors underlying the demand for better governance: organizational governance failures, increase in (institutional) investors with considerable clout in an era of investor capitalism, and the rising frequency of multimillion-dollar class action lawsuits (Hermanson and Rittenberg, ROIA, p. 38).

The IIA's *International Standards for the Professional Practice of Internal Auditing (2003)*, hereafter *Standards*, highlight the internal auditor's role in governance. Specifically, *Standard 2130* on governance states that:

“The internal audit activity should contribute to the organization's governance process by evaluating and improving the process through which (1) values and goals are established and communicated, (2) the accomplishment of goals is monitored, (3) accountability is ensured, and (4) values are preserved.”

The *Standards* also require the internal auditing function to report to the board and senior management on significant corporate governance issues (*Standard 2060*); evaluate risk exposures related to the organization's governance (*Standard 2110.A2*); and evaluate the adequacy and effectiveness of controls encompassing the organization's governance (*Standard 2120.A1*).

At the same time that the internal auditor's responsibility regarding corporate governance is increasing, IT's role in corporate governance is also increasing. IT is critical to organizational strategy development and execution because it can directly affect “what an organization does, how it operates, how it interacts with its customers, and its competitive position” (Davis and Hamilton, 1993). We now discuss how IT drives the demand for better governance and then helps organizations meet this demand; and how internal auditors can leverage IT to effectively discharge their professional responsibilities and fulfill rising expectations related to governance.

IT as a Driver

A key factor underlying the demand for better governance is IT because organizations are increasingly dependent on IT to enable business processes and activities to occur reliably (Vowler, 2003; Williams, 2003). As the backbone of e-commerce, the Internet has been described as the greatest opportunity and greatest threat facing organizations (Rosenoer, Armstrong, and Gates, 1999). Not only is IT changing the way business is conducted, but IT also increases risk and changes (needed) controls. The increased risk results from (1) the organization's inability to continue business if systems are not functioning properly, and (2) the use of IT to operate globally and interconnect with outside entities (Vowler, 2003). In this interconnected world, inter-enterprise integration of software and internal controls with business partners must be seamless (e.g., SCM, CRM). Internally, operational controls must integrate seamlessly with technical controls to assure that computer systems and networks are reliable and recoverable (Bishop, 1997).⁸

IT is an integral component of corporate governance because it is the primary method by which organizations achieve their objectives and at the same time changes the organization's risk level and needed controls. Surprisingly, IT is one of the least understood components of corporate governance — often overlooked by directors and CEOs until too late (Williams, 2002, 2003). Industry experts warn, however, that investors are becoming increasingly IT-literate, worrying about IT's risk to operations and beginning to scrutinize IT investments with the focus on the (timely) delivery of major IT projects and system efficiency (Huber, 2002). These new risks, controls, and investor scrutiny are driving the demand for improved governance to ensure that IT investments are appropriately and effectively implemented, ultimately increasing shareholder value.

Congress passed the U.S. Sarbanes-Oxley Act of 2002 to improve corporate governance and accountability with the expectation of preventing future corporate governance failures and for bolstering market confidence. Three sections of the Act are especially relevant to IT. Specifically, Section 302 requires CEO and CFO to annually certify the completeness and accuracy of financial statements; Section 404 requires external auditors to attest to management's assessment of the effectiveness of internal controls over financial reporting; and Section 409 requires companies to report material changes in their financial position on a "rapid and current basis." These sections of the Act require transparent systems and business processes, a clear understanding of internal processes and system controls, and (near) real-time reporting, respectively. A new publication by the IT Governance Institute (ITGI) furnishes timely guidance about disclosure controls as well as controls over financial reporting in response to the requirements of Sarbanes-Oxley (Fox and Zonneveld, 2003).⁹

IT as an Enabler

To meet the increased governance demands, organizations are implementing a variety of new IT measures. First, organizations are establishing IT governance committees to review IT strategy and execution with the chief information officer (CIO) playing a key role.¹⁰ Second, organizations can use IT to meet the demands of corporate governance. For example, to detect risks and document controls, organizations are replacing narrative descriptions of controls with system flowcharts via flowcharting software. While flowcharts help visually in identifying functional aspects of a system, *state transition, activity, and interaction diagrams* provide a better means of identifying risks by allowing parallel activities and their synchronization, which help reveal the behavioral, dynamic, and interactive nature of the system.¹¹

Sarbanes-Oxley places certain responsibilities on the audit committee with respect to data integrity, information security, and other contingencies. Attempting to create transparent

financial reporting systems, many organizations are completely overhauling their control, monitoring, and reporting processes, including those complying with the whistleblower provisions of Sarbanes-Oxley (Sarbanes-Oxley, Section 301.4). Organizations can select from several different internal control frameworks to comply with the Act, including *Committee of Sponsoring Organizations (COSO)*, *ISO 17799*, and ISACA's *Control Objectives for Information Technology (COBIT)*.¹² Organizations can also streamline their ERP systems by implementing software preferably from a single vendor.¹³ Software vendors are also helping this effort by developing Sarbanes-Oxley compliant applications (Schwartz, 2003) as well as applications to document and monitor controls and create user-defined alerts for noncompliance ("Market Dynamics," 2003). In addition, governance software is becoming available for monitoring IT projects with "IT dashboards" and user-defined alerts (e.g., timing, budget) (Krass, 2003).

IT can also help support near real-time reporting also referred to as the "virtual close." Fully integrated ERP systems, business intelligence (online analytical processing, data mining, digital dashboards or data visualization), data marts and warehouses, and enterprise analytics should allow organizations to identify material changes and help streamline their external reporting process in compliance with Sarbanes-Oxley (PricewaterhouseCoopers, 2003). In addition, *eXtensible Business Reporting Language (XBRL)* provides a standard way of sharing business information so that organizations can quickly aggregate external and internal information and share it with other external entities, including regulatory agencies, analysts, and investors.¹⁴ The Internet can immediately distribute required information to shareholders and even allow them to vote electronically.

When information is placed on corporate Web sites, users visiting these sites are naturally entitled to rely on the information posted therein. However, in the presence of hyperlinks, users typically find it difficult, if not impossible, to locate the boundaries of financial information they read in electronic form (CICA, 1999). The issue of undefined borders opens up the question of responsibility, and hence, liability for linked information. Therefore, it has been recommended that the internal audit function should include the corporate Web site within its review scope to ensure that Web site activities and security issues are being monitored as part of the board of director's corporate governance mandate (CICA, 1999b).

Internal auditors can play a pivotal role in helping organizations leverage IT to meet the increased demand for improved governance by evaluating current risks and controls as well as define and assess the promise and utility of future, contemplated monitoring systems. Internal auditors can also help develop an information system to provide the board with mandated financial information, industry insights, risk and controls analysis, and the integrity of the financial reporting system (Bishop, Hermanson, Lapidés, and Rittenberg, 2000, p.

50). Moreover, if internal auditors highlight the importance of using appropriate ontologies and semantic modeling (i.e., systems modeled using Resources Events and Agents, REA framework, McCarthy, 1982; David, Gerard, and McCarthy, 2002) to develop these systems, organizational transparency and performance should improve (see Chapters 2, 3, and 5 of RAISD for a more detailed discussion of these topics). Thus, internal auditors can leverage IT in setting and influencing the strategic direction of the organization in numerous ways.

Finally, internal auditors can coordinate with external auditors with respect to IT reviews and audits to improve the level of total audit coverage. Indeed, boards of directors and senior executive management prefer such cooperation to occur, primarily with a view to decreasing overall audit costs. Also, both internal and external auditors seem to agree that the benefits of coordination include greater achieved coverage simultaneously with a minimization of duplicate efforts (Felix, Gramling, and Maletta, 1998). A higher level of total audit coverage, when it has the outcome of reducing total audit costs while simultaneously enhancing audit effectiveness, should improve corporate governance by increasing the monitoring, accountability, and accuracy of the firm's transactions and financial reporting.

Research Questions

- Under what circumstances could IT automatically provide assurance on risk and controls to outside parties (e.g., SAS 70 reports)? Can IT automatically generate reports about the effectiveness of corporate governance processes tailored to meet stakeholders' specific needs?
- What are the impacts of XBRL on the organization and on external reporting? How can IT best streamline external reporting?
- What are the economic benefits of implementing "integrated" IT governance? What is the best way to keep stakeholders informed about the progress of IT projects?
- What are the key ways in which, by appropriately leveraging IT, internal audit can most effectively promote and support organizational governance?
- ❖ Under what circumstances would it be beneficial for internal auditors to work with external auditors to increase total audit coverage? Can a conceptual model be developed to indicate the appropriate level of total audit coverage?
- ❖ How can IT best enhance total audit coverage (between internal and external auditors)? Is there a trade-off between the desire to reduce combined audit costs against the goal of achieving enhanced overall audit effectiveness?

- ❖ Can internal auditors provide assurance about their organization’s IS using criteria similar to AICPA’s *Systrust*? Would stakeholders accept an internal auditor’s assurance (e.g., for SAS 70 reports)? Is it possible to develop a conceptual model indicating the conditions under which different parties benefit from internal audit assurance?

IV. Assurance and Consulting Services

Chapter 4 of ROIA examines the range of assurance and consulting services provided by the internal audit function to “add value and improve an organization’s operations” (Anderson, ROIA, p. 106). The chapter identifies six basic types of internal audit services using an Internal Auditing Activity Continuum (Anderson, ROIA, Exhibit 4-4, p. 107). The Continuum, moving from assurance to consulting, includes: financial auditing, performance auditing, quick response auditing, assessment services, facilitation services, and remediation services (see Figure 1). Professional standards require internal auditors to have the knowledge, skills, and competencies needed to perform all or part of any engagement in the Continuum (*Standard 1210*). In this section, we discuss the impact of IT on the activities in the Internal Audit Activity Continuum, describing how internal auditors can leverage IT to help them competently and effectively deliver a variety of audit services.

The internal auditor, however, must remember that use of IT in general is not the goal. Rather, the internal auditor must understand the audit objective(s) he/she is trying to accomplish and select the appropriate IT in terms of cost, efficiency, and effectiveness. The appropriate IT will be determined by a number of internal and external factors shaping the organization, including the perceived status, independence, and competence of the internal audit function. The internal audit function should report to the audit committee, make recommendations, and secure management’s buy-in to implement key recommendations. While some organizations view the internal audit function as part of the control framework, other organizations view the internal audit function as being outside the control framework to provide assurance on IT and non-IT controls. Thus, the position/role of the internal audit function will greatly influence its ability to select and use IT for auditing purposes.

CAATTs¹⁵

IT fundamentally changes the way in which organizations operate internally and interconnect with external organizations — redefining the boundaries for cooperation (Elliott, 1994). For example, *electronic data interchange* (EDI), *electronic funds transfer* (EFT), and *financial electronic data interchange* (FEDI) allow organizations to share information and increase

operational efficiency.¹⁶ These changes are increasing the “demands for assurances of computer systems, information security, controls over the privacy of data, and quality assurance practices” (Anderson, ROIA, 2003, p. 115). Concurrently, intense competition is increasing productivity, (cost) efficiency, and information requirements. In the challenging context of these increasing expectations and pressures, the internal audit function must cost-effectively provide a wider variety of organizational risk mitigation services (e.g., helping to anticipate problems proactively).

To meet these demands, internal auditors can use a variety of Computer Assisted Audit Tools and Techniques, or CAATTs (also known as CAATS), which are computerized tools or techniques that increase the efficiency and effectiveness of the audit. CAATTs originally supported a systems-based approach that tested controls using complicated, embedded techniques (integrated test facilities, *sample audit review file*, *system control audit review file*) and parallel simulations. CAATTs include a wide variety of PC software tools that support a flexible, interactive, databased approach to verify data accuracy, completeness, integrity, reasonableness, and/or timeliness.¹⁷ Internal auditors view CAATTs, especially word processing, spreadsheet, and data analysis/extraction (or GAS) software, critical to the day-to-day operations and success of the internal audit function (Prawitt and Romney, 1996).

CAATTs also include more advanced technologies such as digital agents, embedded audit modules, and neural networks that allow continuous auditing.¹⁸ Static digital agents are programmed objects that help internal auditors by triggering alerts when values fall outside of pre-specified ranges, or activate randomly or at specified times. Mobile digital agents may also be used to search through networks and the Internet for specific (internal and external) information, conditions, or events.¹⁹ For example, a digital agent performing analytical procedures on accounts receivable would e-mail the auditor an exception report when an alert occurs. The digital agent could even verify the sale with the customer and e-mail the confirmation to the auditor (Searcy and Woodroof, 2003). Similarly, embedded audit modules are subroutines in software defined by auditors to continuously perform audit procedures concurrently with application processing. When an exception occurs, the system can alert the auditor via e-mail for follow-up.

While some auditors view CAATTs as a way to automate manual tasks, to truly add value to the organization, (internal and external) auditors need to shift to a new paradigm that redefines CAATTs as “Computer Aided Audit Thought Support” (Will, 1995). This paradigm views CAATTs as freeing auditors from manual/routine tasks so they can focus on exercising judgment and thinking critically. For instance, neural networks can be used to evaluate soft business information and data generated by management’s judgments (AICPA/CICA, 1999). The interactive, real-time nature of CAATTs, especially GAS, allows auditors to quickly

evaluate results, adjust initial audit plans, and test new hypotheses improving the effectiveness and efficiency of assurance and consulting services as described below.

Assurance Services

Assurance services collect evidence to provide an independent assessment of adequacy of controls, compliance with laws and regulations, and safeguarding of assets. These services are provided for management as well as an external third party with the goal of improving information quality. Assurance services include: (1) financial auditing, attestation/compliance audits that may be performed with the external auditor; (2) performance/operational auditing, traditional internal audits to assess risk and provide assurance on internal controls; and (3) quick response auditing, services done at the request of management, which are generally fraud investigations (Anderson, ROIA, 2003, p. 107).

Internal auditors can use CAATs in financial and performance auditing to improve the efficiency, effectiveness, and quality of the audit because CAATs automate existing manual audit procedures, allow new procedures, test the entire audit population, monitor operations, and permit consistent application of audit techniques across time, auditors, and engagements. CAATs, especially GAS, improve the auditor's analytical abilities, widely accepted as the most effective audit technique for identifying financial statement errors (Hylas and Ashton, 1982).

All three phases (planning, execution/conduct, and reporting) of financial and performance auditing benefit from the use of CAATs. In the planning phase, risk analysis and audit universe software can help select areas to audit, identify initial risks, and determine preliminary objectives. The execution/conduct phase of the audit offers many opportunities for utilization of CAATs, particularly when testing IT controls (more on this below). In the reporting phase, auditors can utilize word processing, presentation, and graphics software to make audit reports easier to read and understand. Using CAATs throughout the auditing process should also produce more complete and accurate reports because auditors can perform a more thorough analysis of the data.

In the execution/conduct phase, auditors can use GAS to perform tests on 100 percent of the audit population, which allows auditors to develop a better understanding of the data as well as precise error estimates (extrapolation is not required).²⁰ GAS allows auditors to easily perform a variety of financial auditing tasks, including recalculation of report totals and estimates, identification of unusual transactions and exceptions, generation of confirmations, and identification of items for testing. In performance audits, GAS can help examine the effectiveness of controls. For example, accuracy, completeness, and authorization controls

can be tested by identifying transactions that are incorrectly entered (keying errors), missing data, or not properly authorized, respectively. Flowcharting software can also assist the internal auditor in analyzing business processes and identifying needed controls. This is a critical need for auditors in directing their efforts on key business processes and associated controls.

GAS also provides a variety of functions to help internal auditors perform quick response audits to detect common fraud schemes perpetrated by employees.²¹ Not only has IT increased the incidence of fraud, but it has also increased the average dollar amount of each fraud incident (Parker, 2001). The Association of Certified Fraud Examiners estimates that organizations lose as much as six percent of their annual revenue to occupational fraud (ACFE, 2002).

A 2003 survey of internal auditors found that 51 percent use GAS for detecting and preventing fraud (McCollum and Salierno, 2003). Coderre (2001b, p. viii) identifies eight categories of fraud detection tests that can be performed with GAS: completeness and integrity (data type), cross-tabulation (to organize and view data), duplicates, gaps, data profile (to determine if data falls outside the normal range), ratio analysis, and Benford's Law analysis (which compares patterns in the data to mathematically expected patterns).^{22,23} In addition, GAS allows auditors to search for specific text strings and amounts (e.g., "C-A-S-H" and amounts ending in zeros). To make sure employees have not set themselves up as fictitious vendors, auditors can also compare employee names and addresses with vendor names and addresses.

Consulting Services

Consulting services are agreed-upon activities that the internal audit function performs for management with the goal of improving the organization's operations. While these advisory services are more commonly provided by the Big Four professional services firms to their non-audit clients, and also by smaller, boutique firms specializing in the supply of internal audit outsourcing services, in-house internal audit functions also perform these services for their organizations. Consulting services include: (1) assessment services, evaluations of operations to assist management decision making; (2) facilitation services, engagements to identify operational strengths and weaknesses to help change/improve operations; and (3) remediation services, designed to prevent/stop suspected organizational problems (Anderson, ROIA, 2003, p. 107).

CAATTs can assist internal auditors with providing consulting services, especially facilitation services, creating additional value for the organization. GAS can pinpoint underperforming areas of operations. For example, GAS helps optimize the purchasing function by identifying

duplicate payments, discounts not taken, and missed volume discounts. Internal auditors can use self-assessment and facilitation software to capture employees' opinions with real-time graphical feedback to determine which operational controls are important and how well the controls are functioning (Coderre, 2001a).

Data warehouses, which extract operational data from business systems, also represent opportunities for internal auditors to make recommendations to management.²⁴ Using data mining on a data warehouse allows internal auditors to create "what-if" scenarios and perform trend analyses, identify underlying relationships in the data, and conduct risk analysis to provide insightful, strategic analysis. Online analytical processing (OLAP) enables census sampling of transactions. Further, neural networks can be used for data mining and knowledge discovery to improve operations, in carrying out risk assessment, and prioritizing audit efforts to achieve optimal audit coverage (Ramamoorti and Traver, 1998). Using the IT techniques and tools described above should enhance the image and credibility of the internal audit function by highlighting their role and importance to the organization.

Research Questions

- How much more effective are audits using CAATTs? Does using CAATTs enhance the credibility of the audit function? How are/should constructs such as effectiveness and credibility (be) defined and measured in such studies?
- What is the return on investment for internal auditing from using CAATTs?
- What array of IT tools is available for specific tasks such as risk assessment, fraud detection, and compliance activities?
- Given the plethora of IT tools available, how should internal auditors match tools to tasks? Do variables, such as user sophistication, task complexity, speed, cost, familiarity, or software brand/reputation, matter in technology choice decisions?
- How does the role/position of the internal audit function affect IT (i.e., CAATTs) used for auditing purposes in the organization?
- ❖ How does internal auditor and external auditor use of CAATTs differ?
- ❖ Do auditors employ additional judgment and critical thinking when they use CAATTs? Do they gain a better understanding of the data and organization?

V. Risk Assessment and Risk Management

Chapter 5 of ROIA describes the role of the internal audit function in evaluating risk assessments and processes and reporting the results in the context of the *Enterprise Risk Management (ERM) Framework* recently exposed by the Committee of Sponsoring Organizations (COSO, 2003).²⁵ COSO's *ERM Framework* (2003) consists of the following elements: internal environment, objective setting, event identification, risk assessment, risk response, control activities, information and communication, and monitoring. The *Framework* defines ERM as:

“...a process, effected by an entity's board of directors, management and other personnel, applied in strategy setting across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives.” (COSO, 2003, p. 6)

Corporate governance and risk management are intricately intertwined. Specifically, “corporate governance is the organization's strategic response to risk” (McNamee and Selim, 1998, p. 2). In response to the emergence of risk as a central component of corporate governance, internal auditing is moving from a control-based approach to a risk-based approach (McNamee and Selim, 1998). According to *Standard 2110.A1*, internal auditing should “monitor and evaluate the effectiveness of the organization's risk management system.” This includes evaluating the risks regarding the reliability and integrity of information; effectiveness and efficiency of operations; safeguarding of assets; and compliance (*Standard 2110.A2*).²⁶ To support this paradigm shift, internal auditors must understand how one of the major sources of risks — IT — affects the organization. In the following section, we discuss how IT changes business risks and IT as one of the key components of the *ERM Framework*.

IT and Business Risks

Based on strategic objectives, the level of IT selected by an organization may, from a hardware perspective, range from a multi-terabit mainframe processing environment to a few PCs connected to a network. Its software might range from simple accounting to an integrated supply chain and electronic commerce solution.²⁷ While IT brings great opportunities to the organization, it also brings great risk. The interconnectivity of the e-commerce environment increases the scope and magnitude of risks faced by the organization (Parker, 2001). For example, e-commerce organizations are exposed to a variety of new risks, including viruses,

unauthorized access, hackers, worms, denial-of-service (DOS) attacks, technological obsolescence, system incompatibilities, repudiation, transaction failures, *spoofing*, hijacking, failure of partners, and availability.²⁸ E-commerce organizations also face the exigencies of operating on “Internet time” — shorter life cycles and faster paced transactions. RAISD (Boritz, RAISD, 2002) provides a comprehensive list of 31 features of IT that change the risks, control, and needed assurances of organizations (see Table 4).

While XBRL may make mergers, outsourcing, and continuous reporting easier, XBRL also exposes the organization to additional risks (Weber, 2003). Internal auditors must ensure that the correct and current XBRL taxonomy is used, financial statement elements are correctly mapped to that taxonomy, and XBRL financial documents are coded correctly. In addition, XBRL documents must be protected (e.g., encryption and digital signatures) to prevent easy spoofing, interception, or alteration (Boritz and No, 2003).

Unfortunately, despite the increase in risks as a result of IT, organizations are just beginning to develop ERM programs to address the risks. A 2001 survey of executives found that only 11 percent have full ERM systems in place, 38 percent have a partial model in place, and 42 percent are investigating or planning ERM (Tillinghast-Towers Perrin, 2001).²⁹ These executives report that the two primary reasons for implementing ERM are the need for a unifying framework for managing risk and corporate governance initiatives. While the largest impediment to implement ERM is organizational culture, the second largest impediment is a lack of appropriate technology, data, and tools (Tillinghast-Towers Perrin, 2001, p. 17). Therefore, internal auditors need to encourage (and help) their organizations to develop ERM programs.

Indeed, the lack of a sound risk management framework, formalized qualitative and quantitative risk metrics, and an accessible central repository of actuarial data has hampered the development of ERM by organizations (Ozier, 2003). To help organizations overcome these obstacles, as noted earlier, COSO is in the process of finalizing and releasing an *Enterprise Risk Management Framework* that encompasses and expands its 1992 *Internal Control - Integrated Framework*. The *Framework* stresses that ERM needs to be built into operations, requires a portfolio view of (stand-alone and interrelated) risks, and helps management establish a strategy consistent with its risk appetite. The goal of the *ERM Framework* is to develop a framework with integrated principles, common terminology, and practical implementation guidelines to ensure that the organization’s objectives are achieved, reporting is reliable, and the organization is in compliance with all laws and regulations.

IT and the ERM Framework³⁰

IT pervades the *ERM Framework* — it is not only a source of risk, it significantly provides managers with tools to implement the *Framework*. More precisely, IT is intertwined with all eight components of COSO's ERM framework (the components are identified below in **bold**). The **internal environment** reflects the risk attitude of the organization. The organization's risk attitude affects its choice of IT, level of e-commerce, and the use of emerging technologies — changing the risk of the organization. IT also affects the **objective setting** of the organization. IT is critical to the effective and efficient use of operational assets as well as to the reliability of the entity's reporting. Strong, effective controls in the system will help organizations comply with applicable laws and regulations, especially the sweeping requirements of Sarbanes-Oxley. On the other hand, the strategic objectives of the organization also affect the IT infrastructure of the organization.

IT plays a unique role in the **identification of events**, or incidents that may adversely affect the ability of the organization to achieve its objectives. IT can itself be viewed as an external event, an internal event, as well as an enabler to identify other events. When viewing IT as an external event, an organization must consider the impact of the changing e-commerce environment, increasing availability of data, and emerging technology. When viewing IT as an internal event, an organization must consider how the following items may affect its ability to operate (COSO, 2003, p. 44):

- The acquisition, maintenance, distribution, confidentiality, and integrity of data;
- The availability of data and systems;
- Capacity of its systems; and
- The selection, development, deployment, and reliability of its systems.

As an enabler, IT can be used to facilitate the identification of internal and external events. Managers can use software tools to help generate inventories/lists of relevant events and facilitate workshops to identify potential events from managers and other stakeholders (e.g., RealBiz, Visual Assurance software). In addition, process flow software can help develop process maps to identify and analyze potential events. Escalation/threshold triggers can be programmed to alert management to high-risk areas by comparing transactions/events to predefined criteria. Agents can collect data, identify trends or changes in the underlying population distribution, and communicate the results (Nehmer, 2003). Managers can also use data marts and data warehouses to collect data from past events.³¹ This data can be analyzed using data mining software and other statistical packages to identify leading as well as lagging indicators, trends, and causes of events as well as interactions/combinations.

Audit data warehouses and data mining can also be used in **risk assessment** to estimate the likelihood of an event occurring, supplementing qualitative estimates by managers (Rezaee et al., 2002). One survey of executives found that while 89 percent of their internal auditors conduct risk-based audits, only one-third of their internal auditors conduct ERM risk assessments (Tillinghast-Towers Perrin, 2001). Fortunately, internal auditors can use a variety of different tools to estimate the various financial impacts of different time horizons and probabilistic models, including *Monte Carlo simulation, probabilistic or stochastic simulation, economic scenario generation, catastrophe modeling, optimization software, pro forma financial modeling, risk/frequency/severity mapping, scenario planning, algorithms, and risk matrices* (Tillinghast-Towers Perrin, 2001; Leithhead and McNamee, 2000).³² Industry databases provide significant benchmarking opportunities.³³

In addition, internal auditors may want to use artificial intelligence to help with risk assessment. Neural networks recognize patterns in data with a “learning” process similar to the human brain. Neural networks can generalize from noisy or incomplete data and output classifications or predictions for a situation. Ramamoorti and Traver (1998) found that neural networks can be used to help direct internal auditors’ attention to high-risk audit areas. Specifically, such artificial intelligence tools could be a useful adjunct when engaging in “brainstorming” and “scenario building” activities that seek to track and monitor business risks as they develop (Kinney, ROIA, p. 149).³⁴

Regarding **risk responses**, organizations selecting an avoidance response may choose to ignore/minimize e-commerce and emerging technologies. Alternatively, organizations may choose to reduce the risk of IT by establishing strong IT controls (discussed below). To share the risks of IT, an organization may choose to augment its standard insurance (which generally does not cover network-related incidents) by purchasing a variety of products specifically designed to cover IT risks. Currently, network risk and liability insurance is available to expand the traditional coverage for property, commercial general liability, and crime.³⁵ Software, for instance, the Bayesian Decision Support System, can help provide cost/benefit analysis of risk mitigation measures (Le Grand, 2001).³⁶

IT plays a prominent role in establishing and maintaining **control activities** to ensure that risk responses are carried out. IT controls should support strategic, operations, reporting, and compliance objectives. Controls should also ensure that transactions are complete, accurate, authorized, and valid. E-commerce also changes the types of controls that are effective internally as well as externally with customers and suppliers (Parker, 2001). Moreover, e-commerce control activities must be automatic, dynamic, integrated, preventive, multi-compensating, real-time, and include sound authentication procedures and secured

audit trails (Parker, 2001). Potential automated controls include, but are not limited to, approvals, authorizations, reconciliations, segregation of duties, verifications, logic and reasonableness tests, check digits, as well as the automated generation of exception reports. Transaction (digital) agents could also implement internal controls such as imposing constraints on data entry (Nehmer, 2003).

IT also plays an important role in **information and communication**. Reliable, timely information is needed at all levels of the organization to identify, assess/analyze large amounts of data, and respond to risks. Information must also be communicated seamlessly across the organization. Enterprise resource planning systems (ERPs) in conjunction with integrated data warehouses can collect (and process) vast amounts of internal and external data for ERM. In addition, ERPs, which cut across functional silos, provide conduits for distributing information vertically and horizontally across organizations. The Internet also provides a method for distributing relevant information about the organization's risk to parties external to the organization.

Finally, in today's rapidly changing business environment, the organization's ERM plan must constantly change to ensure that the organization is controlling its risk effectively. This requires ongoing **monitoring** that is real-time, dynamic, and embedded in the organization (COSO, 2003, p. 79). This type of monitoring can only be achieved through the use of IT. Systems can include modules to identify exception conditions or, alternatively, data can be automatically extracted for analysis using CAATs or audit data warehouses. Transaction agents can monitor software applications, other agents, and activities (Nehmer, 2003). Automated variance analysis, reconciliations, and comparisons may also be defined.

Given the pervasive impact of IT on the organization and ERM, internal auditors can add substantial value to the organization if they are familiar with IT that can assist their organization in developing a sound ERM program. Organizations need internal auditors to understand the system, infrastructure, programs, processes, and constituents; record and evaluate controls over critical/sensitive information; assess monitoring procedures; and obtain external assurances (Parker, 2001). In addition, Hunton (RAISD, 2002) suggests that internal auditors may be able to reduce the risk associated with the organization's IT by participating throughout the entire systems life cycle.

Research Questions

- How does IT affect risk, risk assessment, and risk management? (Kinney, ROIA, 2003, p. 147) How can IT best help organizations establish, monitor, and proactively change their ERM activities?
- How can the impact of IT on enterprise risk be accurately measured? How can emerging technologies be identified and their risk measured?
- What are the IT implications for each component of the ERM proposed framework?
- How can IT help communicate risk assessments and responses to stakeholders? Can the message be tailored to fit the needs of the stakeholder?
- What data is needed in an audit data warehouse to monitor and measure risk?
- What are some industry best practices in assessing (technology) risk?
- What is the risk of not converting from legacy technologies? How can the forfeited efficiency gains be measured?
- How does participation by the internal auditor in the entire systems life cycle affect the organization's risk associated with IT? (Hunton, RAISD, 2002, p. 97)
- What role should IT play in identifying (new) risks and assessing the effect of that risk? How does the use of IT in the organization affect the (internal) audit risk model?
- What is the impact of different internal and external factors on the organization's use of IT in risk assessment?
- How can the net effect of IT be assessed (risk vs. opportunity)?
- ❖ Do internal and external auditors evaluate IT-based controls using the same techniques? How can these controls be effectively audited?
- ❖ What is the best way to use IT to identify effective controls? Monitor controls and evaluate risks? Identify inefficient business processes?

- ❖ How do IT risk assessments differ between internal auditors and external auditors? Do the time horizons and number of risk scenarios used by internal auditors and external auditors differ?

VI. Managing the Internal Audit Function

Chapter 6 of ROIA discusses staffing and managing the internal audit function using the fundamental model of management that consists of planning, organizing, staffing, leading and controlling (Prawitt, ROIA, 2003, p. 172). In this section, we examine how IT has affected different components of this model — specifically the hiring and training of internal auditors, the managing of internal audits, and communicating internally and externally. We begin by highlighting The IIA's guidance regarding IT and audit management.

The IIA recently proposed a new *Standard* — 1210.A3 — which states “internal auditors should have general knowledge of key information technology risks and controls and available technology-based audit techniques.” In addition, while all internal auditors are still not expected to have the level of knowledge required by IT auditors, all internal auditors must exercise due professional care by considering the use of CAATTs (proposed amendment to *Standard 1220.A1*). With respect to audit management, *Standard 2030* states that the chief audit executive must ensure that “internal audit resources are appropriate, sufficient, and effectively deployed to achieve the approved plan.” With respect to communications, *Standard 2420* states that communications should be “accurate, objective, clear, concise, complete, and timely.”

Strategic Positioning

It is critical that the chief audit executive (CAE), sometimes called the director of internal audit or the general auditor, project the image of the internal audit function as value-adding and one with a respected organizational status. The CAE should promote the view of heading up a competent, independent and unbiased function reporting to the audit committee. Given such strategic positioning within an organization, the function should clearly be technology-savvy and fully integrate IT into its methodology and activities. Indeed, IT audit expertise can go a long way in securing the credibility of the internal audit function in an increasingly “wired” or even “wireless” world of business. To achieve proper strategic positioning though, the internal audit function needs to hire personnel with the appropriate leadership-oriented skill sets and competencies; attention also needs to be paid to the IT/non-IT mix of professionals associated with the internal audit function. We turn to the topic of successfully recruiting and training IT audit professionals next.

Hiring

IT is changing the needed skill set of auditors. At the same time the above changes are being considered to the *Standards*, Sarbanes-Oxley is also increasing the level of IT knowledge required by auditors. As discussed in Section IV, Sections 404 and 409 of Sarbanes-Oxley require organizations to assess the effectiveness of their internal controls over financial reporting and report material changes in their financial position on a “rapid and current basis,” respectively. In order to meet these requirements, organizations need internal auditors that understand controls, information systems, and IT usage to monitor the organization’s operations. Internal auditors must be able to document controls using IT (flowcharting software) and recognize (and communicate) deficiencies.

AMR Research estimates that the Fortune 1000 organizations will spend \$2.5 billion in initial compliance work and IT investments to be in compliance with Sarbanes-Oxley (Sodano and Hagerty, 2003). IT-savvy internal auditors will play a significant role in this effort. Therefore, large organizations, as well as internal audit outsourcing providers, will seek new and experienced hires with solid IT skills and/or provide internal auditors with IT training (as discussed below). In the current global business environment, as part of cost containment efforts and geographically concentrated availability of competent IT professionals, the IT needs of large organizations are also being met by “off-shoring” arrangements to countries such as India, Ireland, and China.

Training

IT is also beginning to play an important role in training new and experienced internal auditors. Organizations can use a variety of techniques to present new concepts to employees, including computer-based training (CBT), videoconferencing, and Web-based training (WBT). CBT provides interactive training on a CD-ROM and incorporates text, graphics, video, audio, and self-tests. WBT is a type of CBT in which materials are provided via the Internet, not a CD-ROM, and may provide interaction with others via chat rooms or discussion boards. Finally, the Internet can also be used for videoconferencing, allowing instantaneous and real-time interaction between geographically dispersed instructor(s) and students using cameras, microphones, speakers, and projection equipment.

All three methods can be used to train employees about new procedures, techniques, and software. Advantages include a reduction of training costs (versus travel and external training programs), consistency of delivery, easy access, organization-tailored materials, and use by internal auditors (almost) anywhere at any time. The methods also enhance learning because the materials are interactive, can easily be tailored to different learning styles and rates (i.e.,

material can be repeated as many times as necessary), and provide immediate feedback. In addition, W/CBT has been shown to reduce learning time by a third (Kulik and Kulik, 1991) and is well-suited for helping develop skills that require analysis, synthesis, and evaluation (Driscoll and Reid, 1999). Disadvantages include bandwidth limitations for both WBT and Internet video conferences. On the one hand, CBT can become obsolete quickly. On the other hand, WBT can be instantly (and universally) updated.

Some organizations have gone to extensive lengths to build effective training tools and ensure continuity over time. For example, Ameritech's internal auditing group developed an interactive, multimedia training tool called *Coach* to (1) quickly and efficiently train new auditors to perform operational audits, (2) capture and share knowledge, and (3) retain knowledge as turnover occurs. *Coach* uses virtual conversations and identifies past audits with similar characteristics to train auditors in workpaper preparation, risk assessment, and knowledge retention (D'Amico and Adamec, 1996; "How *Coach* Works," 1996).

To comply with laws, regulations, and policies, the organization can provide internal auditors with an electronic audit reference library. The library can be made available on the Internet, corporate LAN or WAN, or CD-ROM. This library should consist of audit standards, eSAC (The IIA's e-commerce Systems Assurance and Control guidance), industry standards, organizational policies and procedures, as well as forms and templates. A good search engine is essential so auditors can quickly shift through the multitude of professional literature and practice guidance available to them.

Managing the Audit

"Audit management is charged with providing an effective audit force, directing audit resources for maximum benefit to the organization, and complying with laws, regulations, and policies regarding auditing" (Le Grand, 2001).³⁷ To manage an adequate number of competent staff, the internal audit function needs to maintain a personnel database and skills inventory. This database helps ensure the professional development of auditors by tracking current skills, training attended, as well as needed future training. In addition, the software assists with audit planning and scheduling by highlighting weak/uncovered areas that require additional training or outsourcing.

Another way organizations help ensure an effective internal audit function is via benchmarking. Organizations benchmark themselves against the internal audit functions at other organizations to determine how they measure up and what they need to improve. Hendrey (1999) describes the IT audit benchmarking results of Dupont against Exxon Corporation, IBM, Ford Motor Company, J.P. Morgan & Co. Incorporated, General Electric,

and Prudential Insurance Company of America. Dupont identified 13 best practices that it used in developing a new IT Audit Integration Model.

To direct audit resources for maximum benefit, the internal audit function can utilize a variety of software tools to help manage the audit. This includes, but is not limited to, audit management and administration software that provides for inventory of the audit universe; planning and scheduling (including assigning auditors to projects based on their skills); project management and audit tracking; time, expense, and issue tracking; and measuring client satisfaction with the internal audit function.

Automated (or electronic) workpapers are replacing the cumbersome traditional paper workpapers in what is called an electronic hypertext systems (EHS) environment. The electronic version allows auditors to easily manage, organize, link and locate text, spreadsheets, graphs, and other sources of information that have been scanned in using scanning software (e.g., optical character recognition (OCR)). All these hypertext links, combined with the ability to click and move out of sequence to selected workpapers and reference materials, allow the auditor to become more directed and efficient.

Despite these navigational efficiencies, recent research in an external audit setting has revealed that cognition in an EHS environment is more demanding than in the traditional paper environment (Bible, Graham, and Rosman, 2004). These researchers hypothesized that in EHS environments, audit workpaper reviewers must remember their initial location, the path taken from that point (especially because no explicit cross-referencing may exist), along with having to remember the workpaper information content, all of which may lead to “cognitive overhead” confirmed by the reported (reviewer) feelings of being “disoriented” or being “lost in space.” Clearly, such an outcome can adversely affect audit review performance.

XBRL may also assist the internal auditor in managing the audit. The XBRL Steering Committee has identified new taxonomies — one for audit schedules and one for working papers. These tools would use XBRL to automate the retrieval of needed data allowing the internal auditor to focus on value-added portions of the audit (CICA, 2002).

Communicating

A variety of communication tools are making the internal audit function more efficient by allowing internal auditors to easily share information. E-mail and file transfer software allow internal auditors to easily and quickly share data and maintain contact. Video

conferencing allows internal auditors to conduct meetings face-to-face even if they are geographically dispersed. The Internet, LANs, WANs, intranets, and wireless networks also increase the connectivity and productivity of internal auditors. Communications software also it makes it possible for internal auditors to complete more work in their home office and reduce traveling time.

Chapter 7 of RAISD (Murthy, RAISD, 2002) discusses the benefits of group (decision) support system or groupware software (e.g., Lotus Notes), which supports groups of people working together on a project, often at different sites.³⁸ With respect to auditors, groupware has given them the capability of pulling the hiring, training, and audit management technologies described above together (Salamasick and Fraczkowski, 1995). Groupware allows internal auditors to share and collaborate on documents — even viewing the same (updated) document at the same time through database replication. This replication eliminates the conflict over who has control over the workpapers and reference library, because everyone has access to them (24 hours a day, 7 days a week). In addition, groupware can replicate server-based information to individual PCs, so that internal auditors can view/work on the information even when they are disconnected from the network. Internal auditors can hand off work to the next auditor via boxes/baskets. Time, date, and user ID stamps aid in tracking the quality and efficiency of internal auditors' work. Groupware also allows managers to monitor the progress of the engagement in real-time, which is becoming more important as organizations move toward (near) real-time reporting (Sarbanes-Oxley, Section 409).³⁹

To be in compliance with *Standard 2420* (communications), IT should help internal auditors analyze and complete the engagement timely. Presentation software, which creates/embeds charts, graphs, pictures, sound, and video clips, can help internal auditors present clear, concise, and complete information. Internal auditors may also need to provide assurance over requested items (e.g., controls) for regulatory agencies, customers, and suppliers. Customized, dynamic, evergreen reports can be made available to various stakeholders via the organization's Web site.

Almost 52 percent of internal auditors report that IT groupware tools reduce the amount of time that they spend "on site" at distant locations from 10 percent to 80 percent (Glover and Romney, 1997). Despite these efficiency (and effectiveness) gains, internal auditors have been relatively slow in embracing these IT-oriented approaches in their work. Surveys of internal auditors find that only 50 percent to 76 percent of internal auditors use IT to assist in audit management and automated workpapers (Bierstaker, Burnaby, and Hass, 2003; McCollum and Salierno, 2003).

Research Questions

- What is the appropriate IT skill set for internal auditors? What must non-IT auditors who are subject matter specialists know about IT?
- What kind of additional cognitive demands (including possible “disorientation”) do electronic hypertext systems (EHS) place on internal auditors when they navigate through electronic workpapers? If this feeling of being “lost in space” is validated, does it adversely affect internal audit (review) performance? What are some ways of mitigating or even eliminating such effects?
- How much does IT increase the efficiency and effectiveness of the internal audit function? What are the appropriate metrics to measure the improvement?
- What is the best combination of IT tools to improve the efficiency and effectiveness of the internal audit function?
- How do different internal auditing environments (e.g., size, dispersion, nationality, organizational structure, reporting structure, culture, number of IT auditors) influence the net benefits from IT deployment? Does IT provide more benefits under certain circumstances than others?
- What is the best way to equip internal auditors to use IT to improve the efficiency and effectiveness of the internal audit function?
- What is the best way to use IT to teach internal auditors new skills? Under what circumstances (task, learning preferences) is IT the best way to teach new skills?
- Under what circumstances should the internal audit function outsource IT audit? What are the costs and benefits of outsourcing IT audit? In similar vein, what are the costs and benefits of “off-shoring” IT audit work?
- ❖ How do the required IT skills of internal auditors and external auditors differ? How do internal and external factors affect the needed skills?
- ❖ How does the use of groupware differ between internal auditors and external auditors?

VII. Ethics, Privacy, and Security

Chapter 7 of ROIA discusses the concepts of independence and objectivity within the context of internal auditing, presenting a framework to identify and manage threats to objectivity of the internal audit function (Mutchler, ROIA, 2003). Independence and objectivity are components of The IIA's Code of Ethics, which states that internal auditors are expected to apply and uphold the principles of integrity, objectivity, confidentiality, and competency. We expand ROIA's discussion of independence and objectivity to encompass the ethical issues facing internal auditors in today's IT-driven world.⁴⁰

Chapter 9 of RAISD (Dillard and Yuthas, RAISD, 2002) describes the current state of ethics research in AIS using traditional ethics perspectives. RAISD also discusses "ethical issues of the Information Age" identified by Mason (1986) as privacy, accuracy, property, and access. Similarly, Sutton et al. (1999) identify the ethical issues associated with auditing and IT as: epistemology, quality of work life, intellectual property, competitive advantage, and information privacy and security.

In today's litigious society and cyberspace environment, maintaining the security of confidential information has become an important professional and legal responsibility falling squarely within the compliance domain. Privacy, confidentiality, documentation and records retention, and identity and credit theft protection are significant concerns in a growing e-commerce marketplace. In this section, we focus on the recurring issues of information privacy and security and how they challenge the internal auditor's ability to uphold The IIA's Code of Ethics. Internal auditors must properly recognize and prepare for the impact of such vulnerabilities and exposure on the organization. Indeed, internal auditors can play a significant role in developing and maintaining an adequate internal control structure that incorporates prevention against system intrusion (Bou-Raad and Capitanio, 1999).

We also discuss how IT can help mitigate such threats as well. When reading this section, painting with a broad brush, the following quotes provide some perspective on the intersection of technology and ethics:

"Technology changes, compassion does not."
"What we have today are technological giants, but ethical infants."

Privacy

IT provides organizations with great capabilities and opportunities, allowing organizations to connect with customers across the globe. As technology increasingly pervades our lives, consumers are increasingly worried about informational privacy, or the individual's claim to control the terms under which identifiable personal information is acquired, disclosed, and used (Cuaresma, 2002). Hargraves, Lione, Shackelford, and Tilton (2003) outline four IT developments that have led to today's privacy issues. First, computer processing allows easy dissemination of information. Second, databases and data warehouses permit quick storage and retrieval of vast amounts of (personal) consumer information. Third, network communications make it easy to collect and disseminate information. Fourth, electronic document imaging and storage media allow users to retrieve data anywhere.

In addition to these four IT developments, consumers have additional reasons to worry about the privacy of their information because privacy over personal data is continually eroding (Spinello, 1998). IT allows organizations to collect more information about consumers than ever before on the Internet using cookies, Web bugs, and port scans (King, 2001) for commercial purposes. Moreover, IT increases the risk that proprietary information may be compromised accidentally or maliciously, through hacking or other forms of cyberterrorism.

To help ensure that consumer information is sufficiently protected, several laws have been passed recently to protect the privacy of consumers. Noncompliance with these laws increases the risk of legal action against the organization. Internal auditors need to understand the laws, how they affect their organization, and how to mitigate the risk through proper IT security measures.

The first comprehensive law passed in the U.S. was the 1996 Health Insurance Portability and Accountability Act (HIPAA), designed to protect the privacy of consumer's health records. The second privacy act passed was the 1998 Children's Online Privacy Protection Act (COPPA), regulating Web sites that collect information from children under the age of 13. The third law, Identity Theft and Assumption Deterrence Act of 1998, makes identity theft a true crime that can be investigated/combated by the Secret Service, FBI, and other law enforcement agencies. Finally, a fourth law, the 1999 Gramm-Leach-Bliley Act (GLBA), attempts to ensure that financial services companies preserve the confidentiality of customers' financial information.

Security

In general, security includes considerations such as **system confidentiality** (restricting access to authorized users) as well as **system availability** (ongoing systems resources being available for organizational use). Some of the ways in which computer online security is achieved are through encryption, Data Encryption Standard (DES), Rivest-Shamir-Adleman (RSA algorithm), digital/electronic signatures and biometrics (Friedlob, Plewa, Schleifer, and Schou, 1997). In this context, HIPAA, COPPA, Identity Theft and Assumption Deterrence Act, and GLBA demonstrate the increasing regulatory imperative for organizations to protect consumer data. At the same time, organizational Web sites and intranets are under attack from hackers and others. A survey by the Computer Security Institute (2003) and FBI reveals that 56 percent of respondents experienced attacks or unauthorized access and use with losses totaling \$202 million during 2002. For those attacked, 38 percent report one to five incidents, 20 percent report six to 10 incidents, and 16 percent report 11 to 30 incidents. In addition, 25 percent experienced unauthorized access or misuse of their Web sites, including vandalism (36 percent), denial of service (35 percent), financial fraud (four percent), and theft of transaction information (six percent).

To comply with the privacy laws and combat these attacks, organizations are implementing a variety of security measures. Because physical storage, data access, and dissemination of personally identifiable information must be in accordance with each consumer/patient's wishes, an elaborate information gathering and reporting system, with suitable security measures, must be in place. Organizations also need to establish an enterprise-wide information security program that uses IT to enforce data protection rules (Hargraves et al., 2003). Potential IT tools include multilevel access controls, smart cards, firewalls and their continuous monitoring, intrusion detection software, encryption, tracking the frequency of confidential inquiries, filtering, virtual private networks, and biometrics.⁴¹

Organizations must also ensure that they do not capture information (about children) with passive tracking through cookies, Web bugs, or port scans. Because many organizations operate as extended enterprises today, they must ensure the security of systems belonging to business partners and suppliers that have access to their systems (Gilbert, 2001). Organizations must also ensure that systems are not affected by viruses or worms (via virus software) that may unintentionally distribute personal information — violating privacy laws (King, 2001).

In addition, organizations must protect themselves from abuse, fraud, and attacks from authorized users. For example, a Coca Cola employee stole salary and Social Security information on 450 co-workers (Husted, 2003). Organizations can implement Unified

Enterprise Application Security (UEAS) to protect against “abusive behavior by authorized users — whether employees, partners, or customers” (Cerebit, 2003). UEAS focuses on application security (versus network and operating security), which is important for organizations with applications using different protocols. The software provides for role-based/time-based/context-based authorization, public key infrastructure, audit logs, and non-repudiation services (through digital signatures).

In general, organizations are reinforcing security provisions. Almost 100 percent report using antivirus software and firewalls; 92 percent have access controls; 72 percent use intrusion detection software; 69 percent use encryption; and 11 percent use biometrics (Computer Security Institute, 2003). Unfortunately, 15 percent of respondents in the same survey did not know if their computer systems had unauthorized use in the last year, and 22 percent did not know if their Web site had experienced unauthorized access or abuse. Moreover, only 30 percent of attacked organizations report the incidents to law enforcement agencies because of negative publicity, fear that competitors could use the information to their advantage, lack of knowledge that the information could be reported, and civil remedy seemed best (Computer Security Institute, 2003).

The internal audit function is playing a critical role in insuring the privacy and security of an organization’s data. Audit committees are turning to the internal audit function to assure compliance with all applicable laws because failure to comply and/or protect data exposes the organization to potential lawsuits, financial losses, and loss of reputation (cf. Cravens, Oliver, and Ramamoorti, 2003). The internal audit function needs to perform periodic qualitative and **quantitative** assessments of the organization’s privacy and security provisions. As part of assessing the effectiveness of the provisions, the internal audit function needs to evaluate whether information privacy and security is fully integrated into organizational policies. The internal audit function also needs to determine that the organization has a viable (and periodically tested) disaster recovery plan in place to provide for continuity of operations in the face of unforeseen disturbances.

DOS Attacks

In addition to viruses and worms, organizations are subjected to denial-of-service (DOS) attacks, the second most expensive cyber crime in 2002 with an estimated cost of \$65 million (Computer Security Institute, 2003). A DOS attack is an intentional attempt to prevent legitimate customers from accessing Web services. DOS exploit known bugs in operating systems and servers, while distributed DOS (or DDOS) use an army of *zombie computers* (taken over previously through downloaded agents) to flood and overwhelm the processing

resources of an organization's system.⁴² The threat of DDOS is real, since there are over 4,000 DDOS attacks every week (Narayanaswamy, 2002). Moreover, new types of DOS are continuously being invented. For example, Distributed Reflection DOS (DRDOS) floods the server with forged, valid packets (Joyce, 2002).

To protect themselves from DOS attacks, organizations need to first ensure that intrusion detection systems are in place. Virus scanning software must also be up-to-date to detect rogue programs that turn computers into *zombies*. To stop *spoofing*, routers should not allow outgoing information with invalid source addresses. Organizations should also utilize host-based DDOS protection software that prevents a zombie takeover and damage-control device software to minimize the damage of a DDOS (Narayanaswamy, 2002).

Ethical Hacking

Despite increased security efforts by organizations, the intrusion into organizations' systems is increasing because (1) all IT components have security vulnerabilities and (2) powerful tools exist to exploit these vulnerabilities (CICA, 2003a). Unauthorized users, variously called hackers, red hat hackers, intruders, or crackers break into computers for fun, revenge, or profit (Palmer, 2001). Garg, Curtis, and Halper (2003) estimate the market impact of security incidents between 0.5 to 1.0 percent of annual sales for the average publicly listed organization.

To help identify these vulnerabilities before a hacker does, organizations are beginning to use ethical hacking (also known as penetration testing, or vulnerability testing) to evaluate the effectiveness of their information security measures (CICA, 2003a). The first public discussion of ethical hacking to assess the security of a system was by Farmer and Venema in December 1993. They secretly (and without authorization) tested the security of a variety of organizations, posted the results on an Internet discussion board (Usenet), described how they could exploit the weaknesses, and explained how the weaknesses could be prevented. Farmer and Venema even provided a software application, Security Analysis Tool for Auditing Networks (SATAN), which identified vulnerabilities of a system and gave advice on how to correct them (Palmer, 2001).

Today, organizations hire well-trained, certified ethical hackers (or tiger teams) to perform a series of activities to "identify and exploit security vulnerabilities" (CICA, 2003a) and then report the vulnerabilities and corrections to management. Several different penetration-testing strategies are possible: external, internal, blind, double blind, and targeted. In addition, the following types of penetration testing can be executed: application security testing,

denial of service (DOS testing), *war dialing*, local network, stolen laptop, wireless network penetration testing (or war driving), physical entry, and social engineering (see CICA, 2003a, and Palmer, 2001, for a detailed explanation of testing strategies and types of tests).

While penetration tests go beyond normal audits, they do have several drawbacks. First of all, penetration tests may not find all vulnerabilities. Second, tests are performed at a specific point in time and are not ongoing efforts. Third, they may crash the system. Finally, criminal hackers may be monitoring the transmissions of the ethical hacker and learn the same information (Palmer, 2001). The internal audit function can help the organization harness the power of ethical hacking, while minimizing its potential risk, in order to help protect the organization from seen and unseen vulnerabilities.

Computer Forensics

In addition to using ethical hacking to combat security breaches, organizations can also use computer forensics as a weapon in their arsenal. While ethical hacking attempts to prevent cyber crimes, computer forensics is used after a cyber crime has been committed. Computer forensics is broadly construed as having to do with the preservation, identification, extraction, and documentation of computer evidence (Marcella and Greenfield, 2002). Specifically, computer forensics includes “procedures applied to computers and peripherals for the purpose of producing evidence that may be used in a criminal or civil court of law” (Bigler, 2000, p. 54). In other words, computer forensics is an autopsy of a computer system to yield relevant and admissible evidence pursuant to a legal proceeding (Verton, 2002). Internal auditors can utilize computer forensics to investigate acts that are illegal, unethical, or against organizational policy and involve a computer. Examples include fraud, employee misuse, intellectual property theft, harassment, theft, pornography, or deception committed by employees, contractors, vendors, customers, or other third parties (Bigler, 2000).

Computer forensics requires a set of IT tools and IT knowledge to collect evidence from computers, networks, and the Internet. Software helps investigators create a mirror image copy of computer hard drives for further examination; recover erased files; perform keyword searches throughout the system — even in slack space where erased data resides; view files in any format; determine if the hard drive has been altered; review and analyze system and application logs; analyze e-mail for source and content; recover passwords; and rebuild directories. Bigler (2001) provides an extensive list of software packages that can be used in computer forensics to complete these tasks. Marcella and Greenfield (2002) have written a comprehensive and extremely helpful field manual for collecting, examining, and preserving evidence.

This section has presented a variety of privacy and security issues that threaten organizations' existence. Internal auditors should make sure that management is aware of these new threats as well as ways in which to mitigate those threats. The absence of effective privacy practices increases the inherent risk of the organization because financial and operations risk increases (Hargraves et al., 2003). Internal auditors can help their organization move from no privacy rules/policies to continuously monitoring and improving the effectiveness and quality of privacy policies, practices, and controls. (Hargraves et al., 2003 present a five level model to categorize the maturity of an organization's privacy efforts.) In the future, internal auditors certainly need to include evaluating compliance with privacy policies in their audit programs (Hargraves et al., 2003 also provide a privacy audit program).

Research Questions

- What metrics can the internal audit function use to assess the effectiveness of the organization's privacy and security provisions?
- How do internal and external factors change the metrics used by the internal audit function to quantify the effectiveness of the organization's privacy and security provisions?
- What are some appropriate metrics to measure the impact of a privacy or security breach? What is the best method to determine the financial impact of computerized system intrusion?
- How can the internal audit function help management understand the importance of monitoring unauthorized access to computer systems?
- What is the appropriate level of in-house knowledge of computer forensics techniques?
- What is the best way to monitor business partner's security policies and procedures? What metrics should be used to evaluate inter-organizational security?
- How effective is ethical hacking? Should the internal audit function permanently employ an ethical hacker?
- Should ethical hacking be done by EDP/IT internal auditors or by someone specializing in penetration/vulnerability testing?

- For a given set of internal and external factors, what is the best disaster recovery plan? How can the effectiveness of a disaster recovery plan be evaluated prior to a disaster?
- ❖ Do internal auditors' and external auditors' risk assessments of information privacy and security differ? If so, in what respects and why?

VIII. Internal Auditing's Systematic, Disciplined Process

Chapter 8 of ROIA discusses internal auditing's disciplined process and how internal auditors and external auditors are now using the business risk approach to audit organizations (see also Bell et al., 1997). This risk-based, controls-focused approach emphasizes high-level controls and monitoring controls over business processes. (External) auditors believe that this approach allows them to focus on understanding their client's business better. Moreover, "professional judgment plays a large role in answering the questions about how much and what kind of information should be gathered and analyzed during the engagement" (Lemon and Tatum, ROIA, 2003, pp. 283-284).

In this section, we look at the internal auditor's professional judgment in the context of decision aids. Specifically, we discuss human-computer interaction and how IT supports decision making by internal auditors in all phases of the audit — planning, execution/conduct, and reporting. We also discuss the growing importance of knowledge management. It is important not to forget that while decision aids can supplement an auditor's decision-making capabilities, they cannot supercede or supplant the professional judgment of the internal auditor. Our discussion of decision aids and knowledge management is guided by Chapters 4, 6, and 11 of RAISD, which provide in-depth discussions of expert systems, decision aids, and knowledge management, respectively.

Decision Aids

Internal auditors can make decisions in the following ways: (1) without computer support; (2) aided by computers; and (3) completely computerized. Given that IT is increasing the complexity, pace, and amount of information collected by organizations, auditors must work efficiently and effectively, assimilate large amounts of information, and not be overcome by information overload — which may not be possible for unaided humans in today's environment. Accordingly, auditors are using IT decision aids⁴³ to improve their efficiency and make better decisions by reducing cognitive limitations and biases.

Decision aids help users gather information, evaluate alternatives, and make a decision. Auditing, composed of planning, execution, and reporting, requires internal auditors to complete these three activities as well. Therefore, decision aids can help auditors perform the steps comprising the audit process. Internal auditors can use IT decision aids to help them make the decision or to fully automate monotonous tasks that can be accurately programmed.

While many decision aids are available, the appropriate decision aid depends on the structure of the task that the auditor is trying to perform. Messier (1995) and Rose (RAISD, 2002) describe three categories of decision aids: simple/deterministic aids, decision support systems, and expert systems.⁴⁴ Simple/deterministic aids are designed to correctly solve straightforward, highly structured problems. These (computerized and non-computerized) aids help the decision maker perform easy mechanical procedures or computations. Decision support systems are designed to help users make decisions about semi-structured problems requiring judgment. The decision support system helps by applying structure to the decision and “direct interaction with data and models” (Benbasat and Nault, 1990, pp. 203-204). The third type, expert system, is designed to help users make decisions requiring extensive judgment about unstructured, ill-defined problems characterized by high levels of uncertainty. Expert systems are computerized programs that capture the specialized knowledge of experts using symbolic reasoning so that novices can make judgments similar to experienced professionals. The goal of expert systems is to make expert decision processes and capabilities readily available throughout an organization. Ultimately, these systems are designed to allow novices to perform at the level of experts.⁴⁵

All three types of decision aids can help internal auditors perform their task in each stage of the audit. Automated checklists (that adapt to responses by auditors) help ensure that internal auditors consider all relevant information. Intelligent bots can automate the gathering of information inside and outside the organization. IT can also be used to combine information and help compare alternatives through different format displays (numerical, table, graph), simulations, and automated calculations. GAS helps examine data in detail. Expert systems can be used to evaluate risk and make a decision at the level at which to set risk. Expert systems using case-based reasoning can identify similar past audits. Moreover, if expert systems incorporate neural network technology, the systems can learn and change dynamically with the audit environment.

Knowledge Management

IT is causing the value of most organizations to be generated by intangible rather than tangible assets. While IT is driving this change, IT is also enabling organizations to manage their knowledge through the use of knowledge management systems (KMS). O'Leary (RAISD, 2002, p. 275) defines knowledge management as consisting of capturing knowledge, converting personal knowledge to group-available knowledge, connecting people and knowledge, and measuring the current (and changing) levels of knowledge that is available to manage resources. KMS incorporate world/national/local/research news, who-knows-who contacts, industry intelligence, employee expertise information, frequently asked questions, lessons learned, proposal and engagement, best practice, and functional knowledge (O'Leary, RAISD, 2002).

KMS play an important role in the problem-solving ability of the organization. KMS should not only capture knowledge, but they should help organizations develop and distribute knowledge. To accomplish these goals, KMS integrate a variety of different IT, including data warehouses, data mining, OLAP, intelligent agents, groupware, neural networks, and networks (Internet, extranet, intranets). Knowledge mapping, which provides a visual display of the captured information and the relationships between the information components, plays an important role in communicating the knowledge within the database so users can understand and learn from the KMS, which is necessary for sustainable organizational learning (Chou and Lin, 2002).

To add value to the organization, internal auditors can help their organization develop a KMS that helps preserve institutional memory, organizational expertise, and ensure continuity/consistency over time. An effective KMS requires knowledge to be constantly produced, captured at the source, transmitted to a data warehouse, analyzed within the data warehouse, and transmitted immediately to the appropriate users. Internal auditors should play an integral role in helping the organization design a seamless integrated KMS that generates and captures the ever-changing knowledge of the organization.

Research Questions

- What should be the internal auditors' role in designing, implementing, and monitoring KMS? How do different internal and external factors affect that role?
- Do internal auditors specializing in IT/EDP have different cognitive biases than other internal auditors?

- Do internal auditors specializing in IT/EDP use IT decision aids differently than other internal auditors? Are IT decision aids more effective for IT/EDP internal auditors?
- How can internal auditors select the best decision aid for a task? Which decision aids are best for a given task?
- ❖ Do internal auditors and external auditors have the same cognitive biases? Are internal auditors and external auditors exposed to the same amount of information overload? How does internal auditor and external auditor use of decision aids and KMS differ?
- ❖ How effective are decision aids in improving the efficiency and effectiveness of internal auditors and external auditors?
- ❖ What are the best decision aids to help internal auditors and external auditors? How do internal and external factors affect the selection?
- ❖ What are some threshold criteria and best practices for information that should be captured in KMS?

IX. Conclusion

The 21st century Information Age is characterized by the emergence of new, disruptive technologies with a global impact. Industry after industry is being rapidly revolutionized, whether traditional manufacturing or new service suppliers in areas such as banking, finance, insurance, or in wholesaling and retailing businesses. In 1985, McGowan (1985) prophetically stated:

“...[these] information technologies are changing the structure of markets themselves, and altering the life cycles of products in these markets. They’re reordering production and distribution patterns. And they’re causing major changes in the structure of our organizations and in the way people work...preparing for the information age, and staying competitive in it, is the single most significant management challenge of our time.”

Remarkably, almost 20 years later, McGowan’s comments still apply and technology continues to redefine the business world. In fact, a recent *Wall Street Journal* front-page

article observes that “the powerful force of technology [is] reshaping one company after another...It is disrupting basic business models, plunging companies into new markets, creating new competitors and blurring the boundaries between industries” (Angwin, Peers, and Squeo, 2004).

In this supplemental chapter to the *Research Opportunities in Internal Auditing* monograph, we have sought to capture the key insights into how IT affects almost every important dimension of the internal audit function: its organizational status and charter, scope, methodology, and activities. Indeed, IT does seem to bear upon everything from strategy, to management IS, to managerial decision making, to business processes including reengineering efforts, and the overall stewardship and governance mandate. Consequently, the widespread influence of IT on almost all internal audit activities designed to promote and support effective organizational governance lead us to use the descriptive chapter title phrase: “pervasive impact.” With respect to understanding IT’s role and impact, we must recognize that IT serves as both a *driver* — in setting the strategic direction of the organization — as well as an *enabler* — in helping to execute effectively against the formulated and adopted organizational strategy.

Perhaps the most important consideration in using IT for competitive strategy formulation is to achieve a long-run, sustainable competitive advantage. Davis and Hamilton (1993) have convincingly argued that the interaction of business strategy, IT, and business processes is an iterative process. Thus, strategy considerations may suggest IT uses but IT uses in turn may suggest changes in strategy; in other words, strategy decisions lead to requirements for business processes, but innovative processes too may suggest changes in strategy (Davis and Hamilton, 1993). Such a bird’s-eye view of the influence of IT on organizations today is critical for internal auditors who have a tremendous opportunity to contribute on dimensions such as organizational governance, risk management, and control processes and best practices. Not surprisingly, the embedded nature of the internal audit function within organizations naturally positions IT to exert a pervasive impact on the internal audit function.⁴⁶

The chapter draws upon two monographs: *Research Opportunities in Internal Auditing* (ROIA) from The IIA Research Foundation, and *Researching Accounting as an Information Systems Discipline* (RAISD) from the American Accounting Association, to surface various researchable IT issues in the context of internal auditing. However, we caution researchers to first recognize and understand the differences between internal auditors and external auditors. This chapter has attempted to highlight some of these differences and how they affect the use of IT by the internal audit function as well as shape the internal audit function’s contribution to the organization.

In closing, we must concede that the opportunities for carrying out research on IT and internal auditing are even richer than we contemplated initially. The Internet revolution, in conjunction with sweeping corporate governance reform legislation, will exert a tremendous impact on how internal auditing evolves as a profession. This is yet largely uncharted territory that promises to become a fertile ground furnishing an abundance of research possibilities for academics and reflective practitioners to make seminal contributions. We hope that the list of questions summarized in the Appendix will stimulate much theoretical and applied research that would be of interest to the academic and practicing arms of the internal auditing profession.

X. Tables and Figures

Table 1 ROIA and RAISD Table of Contents		
Chapter	ROIA (2003)	RAISD (2002)
Editorial Preface	Monograph introduction by the co-editors, A.D. Bailey, A.A. Gramling, and S. Ramamoorti	Monograph introduction by the co-editors, V. Arnold and S.G. Sutton
1	Internal Auditing: History, Evolution, and Prospects (by S. Ramamoorti)	Foundations and Frameworks for AIS Research (by S.G. Sutton and V. Arnold)
2	Internal Audit and Organizational Governance (by D.R. Hermanson and L.E. Rittenberg)	Ontological Issues in Accounting Information Systems (by R.A. Weber)
3	The Internal Audit Function: An Integral Part of Organizational Governance (by T.F. Ruud)	Design Science: An REA Perspective on the Future of AIS (by J.S. David, G.J. Gerard, and W.E. McCarthy)
4	Assurance and Consulting Services (by U. Anderson)	Expert Systems in Accounting Research: A Design Science Perspective (by S.A. Leech and A. Sangster)
5	Auditing Risk Assessment and Risk Management Processes (by W.R. Kinney)	The Participation of Accountants in All Aspects of AIS (by J.E. Hunton)
6	Managing the Internal Audit Function (by D.F. Prawitt)	Behavioral Decision Aid Research: Decision Aid Use and Effects (by J.M. Rose)
7	Independence and Objectivity: A Framework for Research Opportunities in Internal Auditing (by J.F. Mutchler)	Group Support Systems Research in Accounting: A Theory-Based Framework and Directions for Future Research (by U.S. Murthy)
8	Internal Auditing's Systematic, Disciplined Process (by W.M. Lemon and K.W. Tatum)	Empirical Research in Semantically Modeled Accounting Systems (by C.L. Dunn and S.V. Grabski)
9	—	Ethics Research in AIS (by J.F. Dillard and K. Yuthas)
10	—	Research Opportunities in Electronic Commerce (by G.L. Gray and R. Debreceeny)
11	—	Information Systems Assurance (by J.E. Boritz)
12	—	Concepts in Continuous Assurance (by M.A. Vasarhelyi)
13	—	Knowledge Management in Accounting and Professional Services (by D.E. O'Leary)

Table 2
Top Information Technology Issues in 2003

IIA Advanced Technology Committee's Top 10 Technology Issues in December 2003

1. Legislation and Regulatory Compliance
2. Threat and Vulnerability Management (application exploits, DDOS, IM, SPAM, Viruses, Trojans, Worms)
3. Privacy (including identity theft)
4. Continuous Monitoring/Auditing/Assurance
5. Wireless Security
6. Intrusion Protection (including firewalls, monitoring, analysis, reaction)
7. IT Outsourcing (including offshore)
8. Enterprise Security Metrics (dashboards, scorecards, analytics)
9. Identity Management
10. Acquisitions and Divestitures

IIA Strategic Directive #2 Top 30 IT Issues in March 2003

- | | |
|-------------------------------------|-----------------------------------------------|
| 1. Intrusion protection | 16. Automated internal control tools |
| 2. Physical and logical security | 17. Automated risk analysis tools |
| 3. Web site management and security | 18. Document and electronic imaging |
| 4. Web-enabled systems | 19. Distributed databases |
| 5. Computer networks | 20. Enterprise Resource Planning (ERP) |
| 6. Privacy | 21. Automated audit planning tools |
| 7. Internal control assessments | 22. Human Resources Information System (HRIS) |
| 8. Authentication | 23. E-mail and instant messaging |
| 9. Contingency planning | 24. Executive decision support systems |
| 10. E-commerce | 25. Portable computing |
| 11. Wireless communications | 26. Computer forensics |
| 12. Continuous monitoring | 27. Architecture hardening |
| 13. Data encryption | 28. Customer Relationship Management (CRM) |
| 14. File interrogation systems | 29. Automated performance management systems |
| 15. Data theft | 30. Groupware and collaborative computing |

Table 3
Evolution of IT and the Internal Audit Function

Time Frame	IT Developments	Internal Audit Function Developments	Evolution of IT Audit
Mid-1950s	Computer begins processing business applications using punched cards.	(Internal) auditors “audit around the computer.”	1 st generation EDP Audit: Compliance
1960s	Tape drives replace punched cards. Generalized Audit Software emerges.	Sampling applications explored. Primitive “Auditing through the computer” approach emerges. Test decks used to test computerized systems. Internal audit functions begin to perform operational audits.	
1970s	25 proprietary GAS packages. ACL created. Multitude of tests created to test computerized systems.	IIA issues the influential <i>Systems Auditability and Control (SAC)</i> reports.	
1980s	Personal computer (PC) is born. IDEA software created for PC.	(Internal) auditors continue to slowly experiment with IT.	2 nd generation IS Audit: Control frameworks
1990s	Enterprise Resource Planning (ERP) systems proliferate. Internet use soars. Inter-enterprise integration key to success (CRM, SCM). Ethical hacking commences.	Internal auditors continue to adapt GAS and expand role within organizations. Rate of IT adoption intensifies with the emergence of the Internet.	3 rd generation IT Audit: Risk/Control

Table 3 (Cont.) Evolution of IT and the Internal Audit Function			
Time Frame	IT Developments	Internal Audit Function Developments	Evolution of IT Audit
1990s	Privacy laws enacted: HIPPA, COPPA, GLBA, Identity Theft and Assumption Deterrence Act.	Industry knowledge, regulatory compliance, and IT specialization become important.	COBIT framework released.
2000s	Internet and global communications technology revolutionize business; computer forensics surges ahead.	Internal audit focus on supporting Sarbanes-Oxley Sec. 302 (CEO/CFO certification), Sec. 404 (internal controls management assessment/ auditor/attestation), and Sec. 409 (real-time reporting by issuers).	4 th generation IT Audit: Risk management process. IT Governance. Institute guidance. COSO ERM framework.

Table 4
Boritz’s Features of IT that Change Risks, Control,
and Needed Assurances of Organizations

Features of IT	Impact on Risk/Control/Assurance
Speed of processing enables processing of huge volumes of data.	Errors are magnified, potentially engulfing correction processes.
Real-time processing of transactions eliminates time buffer for error checking/correction.	Errors affect business activities in progress. Systems no longer controllable by people; instead, require monitoring by systems themselves.
Consistency of performance promises steady operation of system processes.	Good news for well-tested processes; bad news for processes with flaws.
Relative inflexibility	Barrier to remedial action when problems are discovered. It is much easier and cheaper to design quality in rather than retrofitting later.
Shift from mainframes to small computers used alone, or increasingly, as part of networks devoted to information sharing and cooperative computing.	Corresponding changes in the nature, organization, and location of key information system activity, such as the shift to end-user computing. Risk and control points proliferate and require new assessment approaches.
Widespread availability of powerful yet inexpensive computer hardware and powerful, inexpensive, and relatively user-friendly software with graphical user interfaces.	Personnel with limited software training and IT skills have access to potentially powerful tools. This creates both control opportunities and risks.

Table 4 (Cont.)
Boritz's Features of IT that Change Risks, Control,
and Needed Assurances of Organizations

Features of IT	Impact on Risk/Control/Assurance
Widespread incorporation, through miniaturization, of powerful computing capabilities in numerous devices designed for personal and professional use.	Significant processes can be embedded in small devices that may not give any visible clues about their system access, data storage, and processing capabilities.
Shift from custom-tailored systems to prepackaged software for both personal use and for enterprise-wide systems such as Enterprise Resource Planning Packages (ERP) and Customer Relationship Management (CRM) systems.	Entities rely on external suppliers for support and enhancement. Emphasis on controls over contracts and monitoring of supplier performance against contracts.
Continuing development of intelligent support systems incorporating expert systems, neural networks, intelligent agents, and other problem-solving aids.	Increases embedding of significant decision making within software. Emphasis on controls over software development, implementation, and maintenance.
New data capture and mass storage technologies.	Increases computerization of data/information in text, graphic, audio, and video formats. Emphasizes managing, presenting and communicating information using multimedia approaches. Requires new techniques to access and analyze information.
Increasing availability of computerized data for access in real or delayed time both locally and through remote access facilities, including via the Internet.	More access points require logical as well as physical access controls.

**Table 4 (Cont.)
Boritz’s Features of IT that Change Risks, Control,
and Needed Assurances of Organizations**

Features of IT	Impact on Risk/Control/Assurance
Vulnerability of storage media.	Creates need for environmental and physical and logical access controls.
Convergence of information and communication technologies.	Affects how people work and shop. Breaks down familiar classifications of processes. Enables digitization of analog data, making it more available for processing and analysis.
Concentration of IS components such as infrastructure, software, data, and personnel functions and knowledge.	Reduces number of control points to be considered. Creates vulnerability to unauthorized access and abuse, as well as accidental destruction.
Distribution of IA components such as infrastructure, software, data, and personnel functions and knowledge.	Creates potential inconsistencies, version control problems, and multiple access control points to be considered. Creates coordination difficulties and vulnerability to loss of control or variation in level of controls.
Mass marketing and distribution of IT products and services such as computers, prepackaged software, online data retrieval services, electronic mail, and financial services.	Creates widely dispersed system users and developers with limited knowledge about controls.

**Table 4 (Cont.)
Boritz's Features of IT that Change Risks, Control,
and Needed Assurances of Organizations**

Features of IT	Impact on Risk/Control/Assurance
Reduction of barriers to systems use, encouraging wider penetration of information systems into profit-oriented and not-for-profit organizations of all sizes for accounting and broader management and strategic purposes and increasing the role of end-user computing.	Creates risks of penetration by hackers and viruses and risks of significant system errors in a context of limited controls due to limited end-user knowledge about controls.
Increasing use of the Internet for conducting commerce between organizations and individuals and between organizations and other organizations through electronic commerce systems such as electronic data interchange (EDI) and electronic funds transfer systems (EFTS).	Magnifies business risks stemming from control weaknesses and other vulnerabilities.
Integration of subsystems through networks and data sharing; i.e., increasing use of networks to link individuals, intra-organizational units and inter-organizational units through systems such as electronic mail (e-mail) and the World Wide Web via the Internet.	Makes it possible for errors and malicious code such as viruses to propagate rapidly through connected systems. Creates control interdependencies among linked units.
Ease of access to data and software through remote access.	Creates vulnerability to intrusion by hackers and viruses.

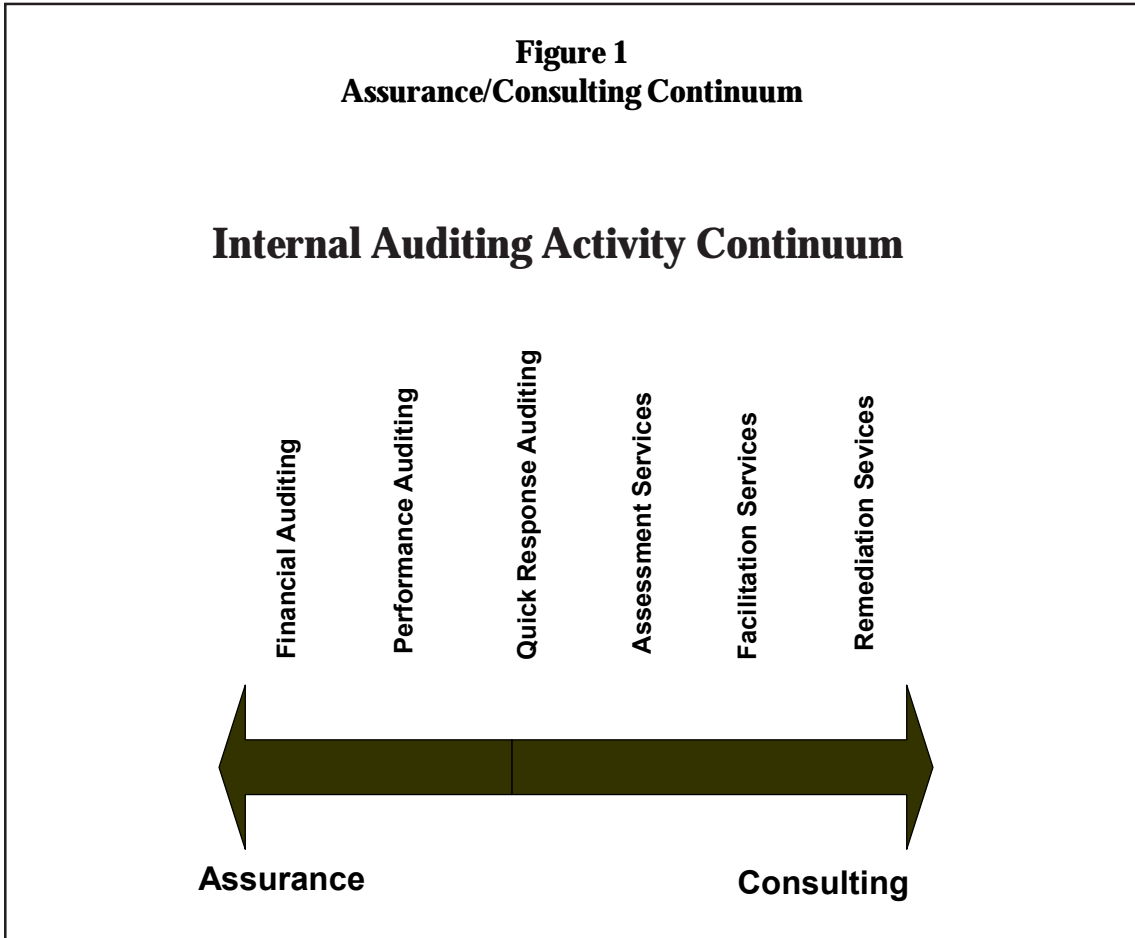
**Table 4 (Cont.)
Boritz’s Features of IT that Change Risks, Control,
and Needed Assurances of Organizations**

Features of IT	Impact on Risk/Control/Assurance
Indirect access to assets via access to data and software.	Creates need for access control over users’ data access privileges and functional capabilities.
Reduction or absence of input documents.	Reduces or eliminates part of the audit trail that, ideally, should permit tracing of summary/aggregate amounts to individual source items.
Lack of visible output or visible audit trail.	Requires use of computer-assisted audit techniques and the proficiency to use them effectively.
Single transaction update of multiple databases.	Creates a difficult audit trail to trace errors to their sources and to correct all errors caused by a single transaction.
Automated accounting procedures and system-generated transactions based on programmed decisions.	Removes control and accountability from humans. Enables use of programmed controls designed to monitor system processes that are too fast, too complex, and too automated to be effectively monitored by humans, as noted earlier in connection with speed.
Interdependence of user controls and programmed procedures and controls.	The information used by users to control systems is itself produced by those systems.

Table 4 (Cont.)
Boritz's Features of IT that Change Risks, Control,
and Needed Assurances of Organizations

Features of IT	Impact on Risk/Control/Assurance
Wider penetration of information technologies such as computer-assisted design and computer-assisted manufacturing (CAD/CAM), computer imaging systems, executive information systems (EIS), and electronic meeting systems (EMS).	Creates business dependence on IT and new risk and control implications, requiring continuous training.
Dependence on IT for competitive advantage.	Magnifies the potential consequences of unaddressed IS risks.
Interdependence of IT strategy and business strategy.	Requires joint decision making about business and IT issues and creates risk if IT and business strategies are not integrated.
Abdication of responsibility for IT control by senior management.	Magnifies the potential likelihood of unaddressed IS risks.
New system development techniques based around information technologies such as computer-assisted software engineering (CASE), object-oriented programming, and workflow technologies.	Requires continuous training to understand inherent risks.
New business reengineering approaches based on effective integration of information technologies and business processes.	Requires blending of IT and business skills more than ever before.

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APPENDIX

SUMMARY OF RESEARCH QUESTIONS

Section II: Historical Perspective on Information Technology and the Internal Audit Function

Research Questions

- Given the historical reluctance to embrace IT, what are some ways to increase the rate of adoption of new IT audit techniques by internal auditors?
- Which of the IT audit applications described in this section deserved to be adopted? What are the differences, similarities, and objectives of each IT audit application?
- Which IT audit application is the best method to achieve efficiency, effectiveness, and/or a given objective? How do internal and external factors affect the choice of the appropriate IT audit application?
- What internal and external factors drive the adoption of IT by the internal audit function (e.g., organization's commitment to IT, IT's role in the organization's strategy, risk associated with the firm's IT)?
- What is the appropriate level of technological knowledge for EDP/IT auditors and non-EDP/IT auditors? How can internal auditor technology skills be enhanced?
- What internal and external factors drive the level of technological knowledge of EDP/IT auditors and non-EDP/IT auditors (e.g., size of the internal audit function, organization's commitment to IT, IT's role in the organization)?
- What is the most effective mix of EDP/IT and non-EDP/IT auditors in an internal audit department? What are the internal and external factors that should drive the mix of EDP/IT and non-EDP/IT auditors in an internal audit department?
- Does participation in systems development compromise the independence of internal auditors?

- ❖ How does the rate of adoption of new IT by internal auditors compare to that of external auditors? Have internal and external auditors adapted to the impact of IT at the same rate (and time frame)? If not, why not?
- ❖ Over the years, which internal auditor (and/or external auditor) technology applications have endured? Why — ease of use, inexpensive, scope of application, mission critical nature? What trends appear to be emerging about future IT applications? By internal auditors? By external auditors?

Section III: Corporate Governance Research Questions

- Under what circumstances could IT automatically provide assurance on risk and controls to outside parties (e.g., SAS 70 reports)? Can IT automatically generate reports about the effectiveness of corporate governance processes tailored to meet stakeholders' specific needs?
- What are the impacts of XBRL on the organization and on external reporting? How can IT best streamline external reporting?
- What are the economic benefits of implementing “integrated” IT governance? What is the best way to keep stakeholders informed about the progress of IT projects?
- What are the key ways in which, by appropriately leveraging IT, internal audit can most effectively promote and support organizational governance?
- ❖ Under what circumstances would it be beneficial for internal auditors to work with external auditors to increase total audit coverage? Can a conceptual model be developed to indicate the appropriate level of total audit coverage?
- ❖ How can IT best enhance total audit coverage (between internal and external auditors)? Is there a trade-off between the desire to reduce combined audit costs against the goal of achieving enhanced overall audit effectiveness?
- ❖ Can internal auditors provide assurance about their organization's IS using criteria similar to AICPA's *Systrust*? Would stakeholders accept an internal auditor's assurance (e.g., for SAS 70 reports)? Is it possible to develop a conceptual model indicating the conditions under which different parties benefit from internal audit assurance?

Section IV: Assurance and Consulting Services
Research Questions

- How much more effective are audits using CAATTs? Does using CAATTs enhance the credibility of the audit function? How are/should constructs such as effectiveness and credibility (be) defined and measured in such studies?
- What is the return on investment for internal auditing from using CAATTs?
- What array of IT tools is available for specific tasks such as risk assessment, fraud detection, and compliance activities?
- Given the plethora of IT tools available, how should internal auditors match tools to tasks? Do variables, such as user sophistication, task complexity, speed, cost, familiarity, or software brand/reputation, matter in technology choice decisions?
- How does the role/position of the internal audit function affect IT (i.e., CAATTs) used for auditing purposes in the organization?
- ❖ How does internal auditor and external auditor use of CAATTs differ?
- ❖ Do auditors employ additional judgment and critical thinking when they use CAATTs? Do they gain a better understanding of the data and organization?

Section V: Risk Assessment and Management
Research Questions

- How does IT affect risk, risk assessment, and risk management? (Kinney, ROIA, 2003, p. 147) How can IT best help organizations establish, monitor, and proactively change their ERM activities?
- How can the impact of IT on enterprise risk be accurately measured? How can emerging technologies be identified and their risk measured?
- What are the IT implications for each component of the ERM proposed framework?
- How can IT help communicate risk assessments and responses to stakeholders? Can the message be tailored to fit the needs of the stakeholder?

- What data is needed in an audit data warehouse to monitor and measure risk?
- What are some industry best practices in assessing (technology) risk?
- What is the risk of not converting from legacy technologies? How can the forfeited efficiency gains be measured?
- How does participation by the internal auditor in the entire systems life cycle affect the organization's risk associated with IT? (Hunton, RAISD, 2002, p. 97)
- What role should IT play in identifying (new) risks and assessing the effect of that risk? How does the use of IT in the organization affect the (internal) audit risk model?
- What is the impact of different internal and external factors on the organization's use of IT in risk assessment?
- How can the net effect of IT be assessed (risk vs. opportunity)?
- ❖ Do internal and external auditors evaluate IT-based controls using the same techniques? How can these controls be effectively audited?
- ❖ What is the best way to use IT to identify effective controls? Monitor controls and evaluate risks? Identify inefficient business processes?
- ❖ How do IT risk assessments differ between internal auditors and external auditors? Do the time horizons and number of risk scenarios used by internal auditors and external auditors differ?

Section VI: Managing the Internal Audit Function

Research Questions

- What is the appropriate IT skill set for internal auditors? What must non-IT auditors who are subject matter specialists, know about IT?
- What kind of additional cognitive demands (including possible "disorientation") do electronic hypertext systems (EHS) place on internal auditors when they navigate

- through electronic workpapers? If this feeling of being “lost in space” is validated, does it adversely affect internal audit (review) performance? What are some ways of mitigating or even eliminating such effects?
- How much does IT increase the efficiency and effectiveness of the internal audit function? What are the appropriate metrics to measure the improvement?
 - What is the best combination of IT tools to improve the efficiency and effectiveness of the internal audit function?
 - How do different internal auditing environments (e.g., size, dispersion, nationality, organizational structure, reporting structure, culture, number of IT auditors) influence the net benefits from IT deployment? Does IT provide more benefits under certain circumstances than others?
 - What is the best way to equip internal auditors to use IT to improve the efficiency and effectiveness of the internal audit function?
 - What is the best way to use IT to teach internal auditors new skills? Under what circumstances (task, learning preferences) is IT the best way to teach new skills?
 - Under what circumstances should the internal audit function outsource IT audit? What are the costs and benefits of outsourcing IT audit? In similar vein, what are the costs and benefits of “off-shoring” IT audit work?
 - ❖ How do the required IT skills of internal auditors and external auditors differ? How do internal and external factors affect the needed skills?
 - ❖ How does the use of groupware differ between internal auditors and external auditors?

Section VII: Ethics, Privacy, and Security

Research Questions

- What metrics can the internal audit function use to assess the effectiveness of the organization’s privacy and security provisions?
- How do internal and external factors change the metrics used by the internal audit function to quantify the effectiveness of the organization’s privacy and security provisions?

- What are some appropriate metrics to measure the impact of a privacy or security breach? What is the best method to determine the financial impact of computerized system intrusion?
- How can the internal audit function help management understand the importance of monitoring unauthorized access to computer systems?
- What is the appropriate level of in-house knowledge of computer forensic techniques?
- What is the best way to monitor a business partner's security policies and procedures? What metrics should be used to evaluate inter-organizational security?
- How effective is ethical hacking? Should the internal audit function permanently employ an ethical hacker?
- Should ethical hacking be done by EDP/IT internal auditors or by someone specializing in penetration/vulnerability testing?
- For a given set of internal and external factors, what is the best disaster recovery plan? How can the effectiveness of a disaster recovery plan be evaluated prior to a disaster?
- ❖ Do internal auditors' and external auditors' risk assessments of information privacy and security differ? If so, in what respects and why?

Section VIII: Internal Auditing's Systematic, Disciplined Process

Research Questions

- What should be the internal auditors' role in designing, implementing, and monitoring KMS? How do different internal and external factors affect that role?
- Do internal auditors specializing in IT/EDP have different cognitive biases than other internal auditors?
- Do internal auditors specializing in IT/EDP use IT decision aids differently than other internal auditors? Are IT decision aids more effective for IT/EDP internal auditors?

- How can internal auditors select the best decision aid for a specific task? Which decision aids are best for a given task?
- ❖ Do internal auditors and external auditors have the same cognitive biases? Are internal auditors and external auditors exposed to the same amount of information overload? How does internal auditor and external auditor use of decision aids and KMS differ?
- ❖ How effective are decision aids in improving the efficiency and effectiveness of internal auditors and external auditors?
- ❖ What are the best decision aids to help internal auditors and external auditors? How do internal and external factors affect the selection?
- ❖ What are some threshold criteria and best practices for information that should be captured in KMS?

Footnotes

¹The ROIA monograph identifies and discusses research questions for a wide range of topics related to internal auditing, such as the profession's history and evolution, organizational governance, assurance and consulting services, risk assessment and management, independence and objectivity, and the systematic, disciplined process characterizing the methodology of internal auditing.

²Following Davis and Hamilton (1993, p. 1), we note that the terms information technology (IT) and information systems (IS) are often used somewhat interchangeably. IT encompasses the use of technology in products or services, but in the context of business systems. IS includes people, data, and procedures as well as technology. The integration of IS with advances in IT have allowed for the seamless flow of information we see in global organizations today (CICA, 2003).

³We are indebted to Professor Dan Stone of the University of Kentucky for pointing this out and for encouraging us to undertake the preparation of this ROIA supplemental chapter.

⁴The RAISD monograph covers a wide variety of information technology (IT) topics, including the Resources-Events-Agents (REA) paradigm, expert systems, artificial intelligence, decision aids, group support systems, ethics, e-commerce, information systems assurance, continuous assurance, and knowledge management — highlighting the enormous breadth of topics encompassed by accounting information systems (AIS) research.

⁵This section borrows heavily from Hafner (1964) and Wasserman (1968) in painting a historical perspective.

⁶“Auditing around the computer” was done without direct auditor involvement in the processing within the computer and included such techniques as observation of controls, system walk-through, documentation review, transaction tracing, and manual review and reconciliation of processing results (Yarnall, 1981).

⁷In this regard, the passage of the Sarbanes-Oxley Act of 2002 and the recent New York Stock Exchange Rule 303A requirement that every publicly listed company have an internal audit function will likely raise the profile of internal auditing and give it even greater prominence (see Ramamoorti, ROIA, 2003, pp. 14-15).

⁸Operational controls are implemented through and by people, while technical controls are implemented through and by IT and include hardware and software access control mechanisms, encryption, and monitoring for information, systems, programs, and operational configurations.

⁹Information Technology Governance Institute (ITGI) guidance document authors Fox and Zonneveld (2003) note that “organizations will need representation from IT on their Sarbanes-Oxley teams to ensure that IT general controls and application controls exist and support the objectives of the compliance effort... [including] mapping the IT systems that support internal control and the financial reporting process to the financial statements and ensuring that IT controls are updated and changed — as necessary — to correspond with changes in internal control or financial reporting processes.” This will likely require close interaction between the chief audit executive (CAE) and the chief information officer (CIO).

¹⁰In specific circumstances, the organization’s general counsel, as well as executives in charge of risk management, ethics, and compliance functions, may also need to be involved in such governance efforts.

¹¹The use of state transition, activity, and interaction diagrams was mentioned on the AECM listserv by Dr. Jagdish S. Gangolly, an associate professor at State University of New York at Albany.

¹²However, it is conceivable at some point in the future that reconciliation among these partially overlapping frameworks will become necessary.

¹³Using software from a single vendor is referred to as instance consolidation. Multiple ERP systems make it more difficult for global organizations to scale up, build, and operate in different jurisdictions. Moreover, the divergence of multiple ERP systems over time could potentially present additional risks.

¹⁴The benefits and risks from deploying XBRL are also mentioned in subsequent sections of this chapter.

¹⁵This section borrows heavily from Coderre (2001a).

¹⁶Consider how electronic funds transfer point of sale (or EFTPOS, which draw money directly from a checking account) has revolutionized the operations of most large supermarket chains and other retail stores as seen daily at customer checkout counters.

¹⁷CAATs include the following software: word processing, text search and retrieval, reference libraries, spreadsheets, presentation, utility, flowcharting, software licensing checkers, GAS, electronic questionnaires, control self assessment, data warehouse, expert systems, and data mining as well as a variety of audit management, administration, and security analysis software (Coderre, 2001a; CICA, 1999a).

¹⁸Vasarhelyi (RAISD, 2002) provides a discussion of continuous auditing from an external auditing perspective. However, many of the premises are applicable to internal auditing as well.

¹⁹For a good discussion of agents see Nehmer (2003) and Gray and Debreceeny (RAISD, 2002).

²⁰The two leading GAS packages used by internal auditors are ACL and IDEA (McCollum and Salierno, 2003). However, the majority of users (51 percent) are still relying on general-purpose Microsoft applications such as Excel for spreadsheets and Access for databases.

²¹Neural network technology can also assist with the detection of fraud (see Ramamoorti and Traver, 1998).

²²Lanza (2003) provides an abbreviated list of tests for fraud and the appropriate CAATs in his FEAR NOT TABLE (p. 33 and 42). In addition, the full document can be downloaded at www.theiia.org/ecm/iiaarf.cfm?doc_id=4248.

²³For an in-depth discussion of Benford's Law see Nigrini (2000).

²⁴See David and Steinbart (2000) as well as Berry and Linoff (1997) for more in-depth discussions of data warehousing and data mining.

²⁵The feedback period for comments on the July 2003 COSO ERM exposure draft ended on October 14, 2003. COSO expects to release the final ERM framework in summer 2004.

²⁶In the external auditing domain, AICPA professional standards require external auditors to consider IT as part of overall internal control, to understand the design of controls, and to formally evaluate their effectiveness as an integral part of the financial statement audit (SAS 55, SAS 78, SAS 88, SAS 94). This has been further reinforced by Section 404 of the Sarbanes-Oxley Act of 2002, and the recently proposed PCAOB standard no. 2 (March 2004).

²⁷RAISD (Gray and Debreceeny, RAISD, 2002, p. 210) identify the four different stages of e-commerce as brochure ware, order entry, intranet, and extranet.

²⁸Parker (2001, p. 86) provides a list of the 10 most common security holes on Web sites.

²⁹A survey of corporate directors found similar results — 45 percent of participating organizations do not have formal methods for identifying risks and 19 percent did not know if their companies had risk identifying processes (Brune, 2003).

³⁰Unless otherwise identified, the discussion in this section expands the ideas presented in the July 2003 exposure draft of the COSO *ERM Framework*.

³¹A multitiered data warehousing architecture has the following major components: (1) source systems, where the data comes from, (2) data transport and cleansing, which move the data between different data stores, (3) the central repository, the main store for the data warehouse, (4) the metadata, which describes what is available and where, (5) data marts, which provide fast, specialized access for end users and applications, (6) operational feedback, which integrates decision support back into the operational systems, and (7) end users, who are the reason for developing the warehouse in the first place (Berry and Linoff, 1997).

³²See McNamee and Selim (1998) for a detailed description of scenarios analysis and risk matrices.

³³XBRL should help proliferate the number of industry databases available.

³⁴Internal auditors may also be able to use *data envelopment analysis (DEA)* to assess risk. Bradbury and Rouse (2002) describe DEA for external audit risk assessment, while Sherman (1984) described the use of DEA in operational audits.

³⁵Salamasick and Le Grand (2003, p. 22-24) provide a detailed description of the gaps in traditional insurance coverage, while Parker (2001, p. 49) provides a list of needed insurance products for organizations engaging in e-commerce.

³⁶Le Grand (2001, pp. 60-68) describes 16 software packages for risk management.

³⁷Le Grand (2001) provides a complete list and in-depth discussion of tools and vendors that can be used in audit management and administration.

³⁸See Fjermestad and Hiltz (2001) and Fjermestad (1998) for a review of extant group support system research.

³⁹Huberty (2000) provides a description of how Cargill uses groupware (specifically Auditor Assistant and Lotus Notes) to improve the efficiency and effectiveness of the internal audit function.

⁴⁰The ROIA chapter on independence and objectivity (ROIA, Mutchler, 2003, pp. 231-268) discusses several mitigating factors alleviating threats to objectivity and objectivity management tools for internal auditors using a comprehensive conceptual framework (see Section VII for a discussion).

⁴¹While HIPAA does not require these measures, health-care organizations may choose to implement them to ensure the security and privacy of their systems.

⁴²Betts (2000) and Clark (2003) provide detail descriptions of different types of denial-of-service (DOS) attacks.

⁴³Rohrmann (1986) broadly defines a decision aid as: “any explicit procedure for the generation, evaluation, and selection of alternative (courses of action) that is designed for practical application and multiple use. In other words, a [decision aid] is a *technology* not a theory” (emphasis added).

⁴⁴This section presents a summary of the information presented in Table 1, p. 215, of Messier (1995).

⁴⁵Expert systems do not include neural networks or other emerging and hybrid technologies such as neuro-fuzzy or genetic-neural applications. Artificial intelligence applications to the business domain are only now becoming popular (Ramamoorti and Traver, 1998).

⁴⁶In cosourcing and outsourcing arrangements, it is extremely important that IT platforms, methodologies, tools, and techniques be compatible with those used in the organization itself.

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Glossary of Selected Information Technology Terms (initial usage within chapter indicated using *italics and underscoring*)

ACL (Audit Command Language) – Generalized audit software used by internal and external auditors to extract and analyze data.

Algorithm – Step-by-step procedure (using logic or mathematics) to correctly solve a problem.

Catastrophe modeling – Computer models that estimate losses from potential disasters.

Committee of Sponsoring Organizations (COSO) of the Treadway Commission (cf. Report of National Commission on Fraudulent Financial Reporting, 1987) – COSO consists of five member organizations, viz., American Institute of Certified Public Accountants (AICPA), American Accounting Association (AAA), The Institute of Internal Auditors (IIA), Institute of Management Accountants (IMA), and Financial Executives International (FEI). COSO's *Internal Control - Integrated Framework*, first released in 1992, is a control and governance framework for processes and management supervisory activities to ensure efficiency and effectiveness of operations, the reliability of financial reporting, and compliance with laws and regulations. The COSO framework includes five components, viz., control environment, risk assessment, control activities, information and communication, and monitoring. COSO's efforts to formulate an Enterprise Risk Management (ERM) framework, is sometimes referred to as COSO II. The final COSO II ERM document is expected to be released in Summer 2004. For more information, see www.coso.org

Concurrent processing – Computer code designed to detect exception or unusual conditions as data are processed.

Control Objectives for Information Technology (COBIT) – The Information Systems Audit and Control Association's (ISACA) internal control framework that defines standards for good IT practices for control over information, IT, and related risks. The framework focuses on the perimeter network, internal network, systems, and application and databases.

Controlled processing (reprocessing) – Auditor reprocesses the data, using a system that the auditor has already verified and tested, to verify and validate the accuracy of the financial statements.

Data envelopment analysis (DEA) – Linear programming-based technique that combines multiple input and output measures into a single measure of productive efficiency.

Economic scenario generation – Models that generate some economic value or capital market value predictions into the future by factoring in assumptions that reflect real world behavior.

Electronic data interchange (EDI) – The exchange of transactional information between organizations using computers.

Electronic funds transfer (EFT) – The transfer of funds between organizations using computers; EFTPOS refers to EFT occurring at the point-of-sale.

eXtensible Business Reporting Language (XBRL) – Implementation of Extensible Markup Language (XML) designed specifically for financial and business reporting.

eXtensible Markup Language (XML) – Language defining tags (or codes) that can be attached to text to identify the meaning of the text.

Financial data interchange (FEDI) – Combines EDI and EFT, simultaneously exchanging funds and transactional data.

Flowchart verification – Analyzing the program logic with flowcharts.

IDEA (Interactive Data Extraction and Analysis) – Generalized audit software used by internal and external auditors to extract and analyze data.

Integrated test facility – System testing by creating a dummy division or company and entering test data into the live system.

ISO 17799 – A control framework that focuses on the internal network and provides technical standards to help establish security controls on the IT processing environment and infrastructure.

Mapping – Techniques to identify logical paths in a process and determine whether all paths are used.

Monte Carlo simulation – Computer simulation with a built-in random process, allowing one to see the probabilities of different possible outcomes.

Optimization software – Software that uses simulation to design a system (or make a decision) that yields optimal expected performance by examining various combinations of input factors.

Parallel simulation – An independent program written to simulate a live program, run on the same source data, and with the resulting output compared to output of live system.

Pro forma financial modeling – Software to help generate forecast and budget financial statements.

Probabilistic or stochastic simulation – Using probability distributions to generate sample distributions that are used to study stochastic behavior observed in a system.

Program code checking – A line-by-line analysis of computer code.

Risk matrix – A matrix with risk on the horizontal axis and system components or audit steps on the left axis; the matrix is sorted to produce high, medium, and low quadrants (see McNamee, 1998, for more information).

Risk/frequency/severity mapping – Graph summarizing the risks facing the organization (frequency vs. severity), to help management with strategic decision making.

Sample audit review file (SARF) – Randomly selects transactions for audit review.

Scenario planning – Identifying trends and projecting them into the future (see McNamee and Selim, 1998, for more information).

Spoofing – Creating an exact replica of a Web page to trick a person into giving personal information.

State transition, activity, and interaction diagrams – State diagrams describe the behavior of a single object; activity diagrams describe processes capturing parallel activities and their synchronization; interaction diagrams describe behavior involving several objects.

System control audit review file (SCARF) – Uses reasonableness tests to identify exception transactions.

Systrust – The AICPA’s assurance framework: an assurance service provided by external auditors that an organization’s system meets defined standards of availability, security, integrity, and maintainability.

Tagging and tracing – Selected records are tagged in an extra field so that they can be easily identified during the audit.

War dialing – A computer hacking technique that uses a software program to automatically call thousands of telephone numbers to find modems.

Zombie(s) computer – A hidden software program that allows the computer to be controlled remotely

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