
COMPUTER AUDITING

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Computer Auditing

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Computer Auditing

To my wife, Mary and our children Gregory and Thomas

Foreword

There tends to be a common pattern to the evolution of new technologies. First comes the invention, hailed as a major breakthrough in the world of science. The novelty of a discovery soon wears off, however, and a protracted period of proving ensues. The original concept has to be applied to the existing world and justify itself, socially and economically. Inevitably, the exploration of new applications carries its share of failures, some of them catastrophic. Ultimately, and this may take ten, fifteen, twenty years—the battle for acceptance is won, the risks and losses have been minimized, the benefits and gains have been proven by the pioneers and the next phase begins. Everyone wants to get on the bandwagon, often with more enthusiasm than sense. In the rush to be up with the leaders, caution is thrown to the winds, safeguards are disregarded and speed of development becomes the only consideration. Eventually a spectacular disaster occurs—and it is only then that control is imposed and the technology settles down to a mature phase of socially acceptable development.

The pattern that has been described would, with minor modifications, fit many aspects of man's history, from the discovery of the New World to the invention of the aeroplane. It also fits the computer. Born in a scientific womb, it did not achieve commercial acceptance until the mid-fifties—and many of us can still remember the 'nineteenth-hole' computers that burgeoned in the early sixties. So it progressed, with the interesting variation that the dishonest element soon discovered the new dimension the computer offered for embezzlement and fraud. In 1973 the Equity Funding scandal, immortalized by the BBC as 'The Billion Dollar Bubble', alerted the accounting profession to the fact that they were living in a new world of invisible ledgers, magnetic tapes and electronic pulses. The multi-coloured pencil was no longer adequate; a new breed of auditor was needed.

In the United Kingdom the full acceptance of computer auditing as a specialist skill has been even more recent: the first professional qualification in this arcane area was introduced only in 1980 in response to the demand from management for reassurance on the quality of the 'specialists' they engaged and the adequacy of their training. Inevitably, there is a current need for practical authoritative textbooks on the subject, so the publication at this time of *Computer Auditing* is singularly appropriate.

The qualifications of Andrew Chambers to present a textbook on computer auditing are unique. He has a university degree and is a Fellow of both the Institute of Chartered Accountants and the British Computer Society, representing the two foundation skills for computer auditing—accounting and computing. To this he adds two eminently practical qualifications: he is a member of the Council of the Institute of Internal Auditors—UK and also the only university lecturer in internal auditing in the United Kingdom. As a final authentication of the quality of this offering, if one were needed, the contents have been thoroughly field-tested by Andrew and his colleagues in training courses to practising computer auditors: the outcome is a volume that will prove equally valuable to practitioner and novice, to accountant and computer specialist.

Peter Hook
Manager, Computer Audit
The British Petroleum Company Ltd

Preface

In writing this book I have attempted to give a clear guide to computer auditing for the practitioner as well as the student. There is no need for the reader to start with an understanding of commercial data processing or with a grasp of data processing jargon. It is however my intention that the careful reader should obtain a thorough grasp of the principles involved and acquire the confidence to start work on all aspects of computer auditing. To help him on his way, the book contains guides and checklists which I have tried to present in a systematic way. My other objective has been to say what must be said in as few words as possible.

I have found this material to be useful in the classroom and seminar situation, and with this in mind I have included numerous discussion topics as well as some exercises with suggested answers.

It would be difficult for me to express adequately my gratitude to those who have shared with me their computer auditing skills. I am particularly grateful to E. A. Evans, W. List, B. Matthews, P. W. Morriss and G. Ward. I am also grateful for the opportunity to refer in this book to the writings of others: in each case I have endeavoured to attribute the reference to its source and to obtain permission to use it. If I have failed to do so it is an oversight of mine for which I would ask your forbearance until I can remedy it in the next edition.

My thanks are also due to Infotech Limited, in particular to Ivan Berti, Colin Steed and Frank Chambers, for their encouragement in the development and use of most of the material contained in this book.

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Part 1 Audit Objectives and Approach

1 Internal and External Audit Objectives

Summary

The scope and objectives of audit in relation to computers. The meaning of audit and of internal control. *Protective* auditing concerned with compliance with laid down procedures and the safeguarding of assets. *Constructive* auditing concerned with efficiency, effectiveness and economy. The relevance to the auditor of what happens within computer programs and within the data processing department generally. The relationship between internal and external audit—particularly with regard to computer auditing.

This chapter is deliberately more about auditing than about computers. It sets the scene for the rest of the book by defining the purpose of auditing.

It is a truism that audit objectives remain the same when computers are in use, for computers are only tools which assist management to achieve its objectives. There is a growing number of instances where the potential of the computer has been so remarkable that managements have modified their objectives, even to the extent of moving into new lines of business which have become feasible and profitable due to the speed of the computer and its greater ability to store, retrieve, correlate and process information. In these cases, of course, the internal auditor's work will be modified to meet the evolved objectives and policies of management. But for a given business activity the *objectives* of the auditor are unchanged whether or not the computer is used. His *approach* to his audit work will be markedly different, and we discuss this later.

Establishing audit objectives

The auditor, whether internal or external, must have a clear picture of his general objectives before he can delineate the boundaries of his interest in computers. These audit objectives must be clearly established, accepted by top management and effectively communicated to managers throughout the