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The Widening Horizons of Information Audit

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Abstract. This paper situates the information audit within the broader environment of enterprise information management (EIM) and associated audit functions. In recent years, information audit has widened its horizons of application, moving beyond the Library and Information Sciences (LIS) space and into the operational world of enterprise management. As well as aligning the information audit process with other enterprise audit processes, this paper also presents the information audit within a research context, discussing methodology and processes; the skills required to conduct an information audit; the outcomes that can be expected in terms of the individual and the organisation; the relationship between information audit and other audit functions, in particular that of internal audit; the implications of information audit on governance, leadership and regulatory compliance; and the role of the information professional in fulfilling the information audit function.

Keywords: information audit; enterprise information management

1. Introduction and history

Over the past 30 years the information audit has widened its horizons of application as it has evolved from a library-focused activity to one that is seen to provide enterprise-wide information management solutions to meet business challenges and management responsibilities. This is evidenced by the altered constituency of participants attending information audit workshops conducted across Australia and New Zealand in the past five years. Prior to 2010, participants were from library and information science backgrounds, whereas in 2014 and 2015 they were primarily from executive management teams including business analysts, CIOs, CEOs, CFOs, and a variety of project leaders, managers and policy makers. Their interest in the information audit process was focused on its application to ensure the rigorous management of information within their organisations with reduced risk and improved compliance. In general they were not concerned about monetary value of information resources and assets, but rather their proper identification, control and management. This situation presents both opportunities and challenges for

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information management specialists within organisations. On one hand the executives are by-passing the information management specialists in search of solutions for what they have identified as significant risk and compliance challenges. On the other hand, the opportunity is there for information management specialists to ensure their organisations have rigorous information management processes in place through the adoption of information audit processes. If we are to consider the information we have as an organisational resource and/or an asset, the need to conduct information audits is a logical one when considering the consequences of not doing so. Despite the informality that usually surrounds information audit due to lack of standardisation and understanding of its strategic role, its value to an organisation should not be underestimated in terms of managing risk, compliance, performance and financial outlay.

At this point it is worth mentioning some of the major studies that have influenced our thinking about the importance of information to the organisation and the role of the information management specialist. In the late 1980s Burk and Horton (1988) identified and articulated the link between business strategy and information resources. The mid 1990s saw the publication of two highly regarded reports by KPMG/IMPACT and Reuters. Firstly the Hawley Report (KPMG/IMPACT, 1994) produced by KPMG with the backing of the Confederation of British Industry (CBI) argued that information was a vital resource and suggested that "the board of directors should address its responsibilities for information assets in the same way as other assets" (KPMG/IMPACT, 1994, p. 23). Reuters *Information as an Asset: The Invisible Goldmine* (Reuters, 1995) reported the findings of a study that saw senior managers of UK companies interviewed about corporate information, with one in four saying that information was its most important asset. In her study of information asset attributes, Joan Stenson (2006) provides a concise summary of the history of works involved with valuation methods, attribute identification, management practices and information use behaviours, covering the 1980s to mid-2000s. Since then we have seen John Ladley's *Making Enterprise Information Management (EIM) Work for Business: A Guide to Understanding Information as an Asset*, (Ladley, 2010) written from a background of data governance and computing. It seems that in 2016 we continue to grapple with the effective management of information assets and resources in business organisations, while the quantity of such information and the form and manner in which it is held continues to grow and threaten organisational productivity and efficiency

There are a number of international and national standards that define, describe and prescribe audit processes, for example *ISO 19011:2015. Guidelines for Auditing Management Systems*, (International Organization for Standardization, 2015b) which states that its audit processes can be applied more widely than the Standard might indicate, provided that consideration is given to context and the specific competence needed. The recent release of *ISO 9001:2015 Quality*

Management Systems – Requirements (International Organization for Standardization, 2015a) sets out the requirements for the management of documented information with mention of review for suitability and adequacy, availability for use where and when needed, protection in relation to confidentiality, improper use and loss of integrity, access, distribution, retrieval and use. This suggests, but does not prescribe an audit process.

Other standards mention information audit specifically, for example *AS 5037-2005: Knowledge Management – A Guide* (Standards Australia, 2005), which presents both information audit and knowledge audits as 'enablers' of knowledge management. Despite the inclusion of information audit, there is no prescribed process, skill or competence requirements stated in the standards. For some years now the information audit has been regarded as a requisite competency for information management specialists, with the topic covered in some, but not all, library schools since the late 1990s. In 2012 information audit was included in CILIP's *Professional Knowledge and Skills Base* (PKSB) (Chartered Institute of Library and Information Professionals, 2012), suggesting acknowledgement of the knowledge and skills required for information governance and compliance. Despite inclusions such as these, the recognition of the information audit process as a key component of effective EIM, governance and compliance, and a requisite skill for information management professionals, we are yet to see information audit positioned alongside audit processes such as those adopted for the management and control of physical assets in organisations and we still do not see LIS professionals regarded as competent information auditors with a key role to play in EIM.

2. Defining and describing the information audit

There has never been a universally accepted definition for the information audit, although an early one developed by the Aslib IRM Network in London in the 1990s is the most commonly used today:

> *'a systematic examination of information use, resources and flows, with verification by reference to both people and existing documents, in order to establish the extent to which they are contributing to an organisation's objectives'. (Aslib IRM Network, London)*

In some versions, the word "examination" has been replaced by the word "evaluation" which is possibly a more accurate way of describing what an information audit does. Although seemingly quite minor, the use of the alternative words opens up an interesting distinction in operational terms. For instance, examining documents is a basic task, sometimes limited to simple scrutiny, with verification of existence, content and procedural completeness. Evaluation is the gathering of information and its more thorough examination, perhaps within an operational environment, in order to draw conclusions or

make professional judgements on its use and effectiveness to meet organisational requirements. Examination, therefore, is a sub-process within the broader term of evaluation. This definition situates the information audit strategically within the organisation, and with its reference to people, it enables the information audit process to encourage dialogue with information users, so including personal information management capabilities and behaviours . CILIP's PKSB uses 'evaluation' in the definition it provides.

As the original Aslib IRM Network definition implies, early information audits in the 1980s and 1990s were examinations of information resources, resulting in an inventory, or a list of what was available and to whom. Technological developments have somewhat complicated the process so now we have varying formats and structures of information within our organisations and devices that have changed the ways in which people access and use information. The consequence of this increased complexity encourages the transition of the information audit from focusing simply on establishing inventories of collections and identifying gaps and duplications in information provision to a much wider analysis of information assets and resources, their creation/generation, access, and usage,

Today's information audit has three major components that review processes, information content and the capability and behaviour of the information user.

1. *Process review* – this is an analysis of information actions at task level that includes information creation, access, use, transfer, storage; cognitive processes; and relationships to other tasks.

2. *Information content review* – identifies what is held, what is needed but not available, what is available but not accessible where it is needed; it also evaluates suitability for purpose.

3. *Capability and behaviour* – identifies skill gaps related to information creation, discovery, delivery, access, transfer, utilisation and storage; highlighting behaviours that influence effective information creation, discovery, delivery, access, transfer, utilisation and storage.

These three processes adopt an information diagnostic that provides the lens through which the evaluation is done. A commonly used information diagnostic consists of the elements of access, quality, responsibility, awareness and capability, as shown in Table 1.

Table 1: Information diagnostic

Elements	Focus	Outcomes
Access	People-to-people and people-to-system relationships	Inequity in provision or access; identification of gaps, duplications, overload

	Assurance and equity of access, volume and format	situations; hidden resources discovered; fragmented/isolated technical systems identified; improved interfaces; simplified IM processes (reduced complexity and managing less); improved information flows.
Quality	Information fit for purpose (accuracy, currency, consistency, completeness)	Identification of sub-standard acquisitions or creations; improved traceability, transparency and accountability.
Responsibility	Information ownership, stewardship, responsibility and accountability Information sharing	Discovery of hoarding situations; improved sharing; accountability recognised; improved matching of financial resources and provision with actual information requirements).
Awareness	Knowing what is available and where to find it Understanding quality, information policies and related procedures	Improved 'line of sight'; understanding of dependencies and relationships regarding information; understanding legal and regulatory compliance with regard to information.
Capability	Knowledge and skills needed to create, access, utilise, transfer and store information; training needs analysis	Implementing skilling, reskilling, and upskilling requirements

Skill and competence - the information audit as a research process

An information audit is an examination and subsequent evaluation, or more precisely an assessment, so it is not technically a research project --- but then again it is. Research is defined by Cameron and Price (2009, p. 4) as "any systematic attempt at collecting and interpreting data and evidence in order to inform thinking, decisions and/or actions in relation to an issue of interest to an

organisation and/or its stakeholders." All research projects begin with a question or questions that need to be answered. In the case of an information audit those questions may be along the lines of "does everyone in the organisation have the best information they could possibly have to do their work", "is everyone in the organisation able to create/generate high quality information" or "are we doing everything we can to minimise the risk involved in our information practices?" In order to answer the question/s of how qualitative data is gathered, this aspect is usually dealt with through interviews and observation with the information creators/users and then verified by those from whom it was gathered. This creates a collaborative situation where ownership of the data is shared. The data is analysed to identify gaps, duplications, non-compliance, strategic risks and other issues. A report is written and then distributed, often with presentations, group meetings and discussions to further explain the findings, recommendations and plans for implementation. Like research, the range of tasks involved in an information audit require a blend of specialised, intellectual, practical and generic skills.

Table 2: Information audit skill requirements

Audit stage	**Skill requirements**
Planning	Proposal writing (business case) Scoping (size, level of the organisation) Resource allocation (people, equipment) Scheduling (timing, in conjunction with organisational activity) Identifying existing knowledge, experience and expertise (examining past audits, surveys, reviews – internal and external to the organisation)
Data gathering	Survey development (choosing the type of survey, developing questions, distribution of survey, collection of data, data management) Interviewing (schedule development; arranging; recording; transcription) Observation (setting up; recording; transcription, review, validation)
Analysis	Software selection Software use Data management Data coding Interpretation of findings
Reporting	Report writing

Presentation

New knowledge, being something that has not been known, articulated or documented before, is often found when an information audit is conducted. Whether it is knowledge that is specific to the particular organisation or a situation within the organisation, or whether it is knowledge that could be applicable to audit projects in other organisations will depend on what was found. Whether or not such knowledge and information is made available outside the organisation is a decision for senior management, made in line with current information policy, relevant business practice and culture within the organisation and the commercial and/or national sector within which it generally operates.

Situating the information audit in the enterprise

The information audit has marked similarities with other formal audit processes within business enterprises, including external financial audit, internal audit, quality audit, asset management audit, information systems audit and knowledge audit amongst others. Each type of audit will use a variety of audit processes and techniques, with different subjects being reviewed in more or less detail depending on specific requirements of the particular organisation being audited. For example, external audit normally focuses on finance and accounting matters, internal audit usually concentrates on governance, compliance and control, while information audit deals with assuring the better management of information generally, its journey through the information life cycle of an organisation, and its proper accessibility. Common domains of activity might be identification of areas of potential risk to the business and detection of potentially harmful behaviours.

In the wider framework of organisational audit functions, including information audit, there would be examination and evaluation of controls and processes for their effectiveness in determining reliability and integrity; review of compliance with procedures, policies, laws and regulations; scrutiny of the existence and safe guarding of information resources and assets; appraisal of the economy and efficiency of resource utilisation; a review of all operations for consistency and alignment with management goals; and the provision of recommendations to organisations for improving their performance and usefulness. However, there are often no links from one audit type to another, which then leads onto a disconnect between both their respective processes and their findings, resulting in the duplication of data gathering, management and analysis processes. The interpretation of data from disparate processes usually then requires higher-level consolidation and correlation to be useful holistically.

All audit processes require practitioners to have a knowledge of the organisation within which they are working. In carrying out any type of audit, auditors should have completed appropriate academic study and practical work

experience. These are sometimes linked through professional training programmes. For instance, in the accountancy profession, the audit process itself provides an opportunity for practitioners to learn about both accountancy and audit as well as their respective roles in business operation and management. In a sense, both accountancy and audit are then natural subject partners in individual professional development. The same development approach applies to numerous other professional disciplines as well as the information profession..

In this arena, the information auditor must understand the role that information plays in achieving the objectives set out in the organisation's policies and formal plans, particularly those related to quality, control and compliance. The information audit process then enables the information auditor/practitioner to learn about organisations in general, their business processes and their management of information resources, assets, issues and business challenges in the general nature of their enquiries. As information auditors, practitioners are therefore able to develop their experience and expertise in the information audit process and its increasing application in the wider framework of the organisation. This has significant implications for the education and training processes through which individuals learn how to become information auditors and represents a fundamental and useful learning opportunity for both existing members of the LIS profession and those practitioners coming into this domain from different disciplines.

3. Opportunities and challenges

Education / training / accreditation / certification

Information audit is a topic covered in some library and information management programmes. Few seem to treat it as a critical component of good information management practice within organisations. While executives have begun to recognise the value of information audit to the organisation in terms of necessary assurance and risk management, and national associations have recognised the value of audit skills and competence for the LIS professional, the education and training covering information audit purpose and process is lacking within the field. Many consultants who offer information auditing services have received their training through commercial workshops or through various forms of practical experience. The value of practical experience cannot be under-estimated, and so a programme of practical workplace experience leading to professional certification would provide assurance regarding expertise and process. The provision of a programme that included comprehensive theoretical and practical education, accredited training, workplace experience and certification would provide consistency of terminology, purpose, process and application, leading to improved understanding about the purpose of the process both within and outside the information profession.

Consistent education, training and accreditation would provide the library and

information management profession with a skills base for the future, and would establish information audit as a recognised and useful independent domain of activity, collaborating with and supporting existing audit functions at the EIM/ECM (Enterprise Content Management) level of business activity. This would facilitate the development of formal standards at industry, national, regional or international level that would further consolidate terminology and related practices.

Nomenclature

The development of relevant Standards would ensure that what is called an information audit actually is an information audit. Due to the inconsistency in purpose and processes adopted, what some would call an information audit is not always an information audit. Inventories are often called information audits, as are information needs assessments. Adding to this complexity is the tendency to apply names other than 'audit' to information audit projects. This practice downplays the strategic importance and implications of the information audit process, as we see it.

Visibility

Few completed information audits have been made publically visible through the publication of case studies that document purpose, process, findings and outcomes. Reasons for this include the sensitivity of the findings (as many of the findings may not be positive) and the confidentiality required for commercial reasons and related assignments/contracts with external consultants. Lack of visibility can also be linked to the fact that practitioners within enterprises may not recognise or appreciate the value of sharing their experience outside their organisation or are not able to allocate the time needed to put such material together as public case studies. Consequently there is a lack of evidence-based literature on the application of information audit methodologies – what people are doing and what the outcomes are – creating disconnect between the practical application and the documentation, or the reporting of the outcomes of the application. This situation impedes the further development of the methodologies and creates a significant gap between documented research and practice.

Cost/benefit

Embarking on an information audit within an organisation, particularly for the first time, is a costly exercise and one that cannot initially guarantee financial benefit. Cost will vary according to the size of the organisation and the intensity of the role that information plays within its business processes. Once an initial information audit is completed, potential financial benefit becomes more apparent, and on some occasions, benefits achieved can exceed the original costs incurred of completing such an exercise.

Requisite skills

Conducting an information audit requires a significant range of skills that are

rarely found in one individual. It is therefore well suited to a team-based approach in order to provide project planning and management, communication, interviewing, data management, qualitative data analysis, data interpretation, report writing, presentation and negotiation skills. While some of these can be learned through traditional channels, it is the expertise, experience, political and social competence of the lead information auditor that will determine how successfully the information audit achieves its objectives. Current formal information auditing education is inconsistent and incomplete. On-the-job training or practical workplace experience is imperative for an individual to understand the complexities of the information audit process and to become a proficient information auditor.

Lack of standards

We are ideally placed to begin the development of information auditing standards that will not only ensure that information auditors are consistently proficient in the process through appropriate accreditation, certification or registration, but also that the information audit process is positioned alongside, or aligned with, other auditing processes within enterprises and similar organisations.

4. Conclusion

Despite information audit being regarded as a means of effecting the management and control of information within an organisation, it is still not related to other associated audit processes; furthermore, LIS professionals are yet to engage with the subject and its wider perspectives. Its value as a means of better identifying, managing and controlling information to reduce risk, and improve regulatory compliance and strategic performance is beginning to be recognised by senior executives. If information management professionals are to provide leadership in this area, consistent education and practical workplace experience must be provided to enable individuals to become proficient information auditors, and new standards must be developed (or existing standards adapted) to provide consistent terminology including definitions, descriptions and process. The information audit process can be aligned with other audit processes within organisations, some of which are required through statute and/or company law. These will include financial (external and internal) audit, quality audit, asset management audit and knowledge audit amongst others.

An information audit within an organisation can be regarded as a research project, with similar elements that include a question to be answered, comprehensively planning the approach, data gathering, data analysis, synthesis and interpretation and reporting. The requisite skills are also similar. By regarding information audit as a research project opportunity, the development of information audit will be progressed; thereby building on existing work that then provides learning opportunities in relation to process, skill and competence,

practical application and experience.

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