

Extending the boundaries of IQ: Can collaboration with information management improve corporate governance?

Heather Maguire
Faculty of Business
University of Southern Queensland
PO Darling Heights
Toowoomba Qld 4350. Australia
Email: maguireh@usq.edu.au

Abstract:

The increase in the volume of information be handled by organisations has increased pressure on corporate boards to ensure that legislative, accountability, business and cultural requirements are met. Recent negative media coverage has brought demands for improved accountability and transparency in corporate governance regimes. At the same time agency theory has highlighted problems such as moral hazard and adverse selection resulting from information asymmetry between boards and CEOs. Effective records management can assist organisations to meet demands for accountability, transparency and compliance and help reduce information asymmetry. Effective records management can assist in providing evidence of due process. Effective records retention can also assist in ensuring that records are retained in compliance with the relevant legislation, regulation or best practice and in ensuring that records which have reached the end of their life cycle are deleted from records systems. Records management can also assist with business continuity by ensuring identification and appropriate maintenance of vital and archival records. Many high profile organisations have suffered severe negative consequences in recent decades as a result of mishandling organisational records. This paper proposes that organisations incorporate records management functionality into the criteria used to assess information quality in order to improve corporate governance mechanisms.

Keywords:

records management, information management, information governance, corporate governance, compliance, accountability, transparency, agency theory, business continuity

Biographical Notes: Heather Maguire lectures in management at the University of Southern Queensland. Her PhD investigating psychological contracting in the banking industry was awarded in 2001. She also holds a BEd, MBus and a MBA. Heather delivers undergraduate and postgraduate courses in management including information management. Heather has consulted for industry in a number of different areas including the impact of change in the Australian finance sector and administrative process improvement within a range of industries. Her research interests include the link between information management, corporate governance and organisational risk, psychological contracting, virtual networking, trust and relational capital.

This is the author's final post-print version of paper.
Maguire, Heather *Extending the boundaries of IQ: can collaboration with information management improve corporate governance?* International Journal of Information Quality: Special Issue on Frameworks, Approaches and Methodologies for Enhancing Information Quality . (In Press)

1 Introduction

The benefits of the extraordinary increase in the volume of information and the speed at which that information is created and disseminated cannot be denied. However, management of the escalating volume of information presents organisations with a major challenge in respect to meeting a rapidly expanding range of legislative, accountability, business and cultural obligations (Queensland Government 2003). Boards are under increasing pressure to improve their organisation's governance mechanisms (Radner 2006) and increasingly find themselves in the 'high-profile crosshairs of shareholders, courts, regulators, and the media' (Chandler & Wardwell 2006, p. 10). Chandler and Wardell propose that many high-profile cases in recent years have resulted from poor processes relating to the documentation of information-gathering, deliberating and decision-making processes.

Additionally, the passing of the Sarbanes-Oxley Act in the United States has increased pressure on boards and senior management to improve transparency in business activities and the reporting of them (Anderson, Herring & Pawlicki 2005). Tapscott and Ticoll (2003, p. 14) define transparency as 'the accessibility of information to stakeholders of institutions regarding matters that affect their interest.' Increasingly enhanced transparency is seen as a critical element of good corporate governance (Treasury Board of Canada Secretariat-Information Management Division 2004). Corporate transparency is based on high quality and effective management of information, increasingly referred to in the literature as information governance. Information governance underpins corporate governance.

However, despite increasing recognition of the importance of information governance and in spite of the media attention focused on inappropriate information management within corporations such as Enron, British American Tobacco Australia (BATA) and HIH Insurance, few academic studies have focused on the links between information quality, information management, and corporate governance. This paper attempts to assist in filling that gap by proposing that extending the boundaries of information quality to encompass information management needs may provide a platform for enhancing an organisation's corporate governance. The paper begins with a description of the key terms and an explanation of the potential impact of the quality and management of organisational information on corporate governance. The perceived problem relating to the failure of the dimensions of information quality to address a number of information management needs is then addressed. The paper then proposes a solution to the perceived problem. This solution encompasses extending the boundaries of IQ by incorporating aspects of IQ suggested by the literature as being essential for effective information management and by applying suggestions for bringing about the required change.

2 Key terms used throughout this paper

2.1 Corporate Governance

Many definitions of corporate governance are provided in the literature. The Australian Stock Exchange's Corporate Governance Council (2003) defines corporate governance as 'the system by which companies are directed and managed. It influences how the objectives of the company are set and achieved, how risk is monitored and assessed, and how performance is optimised.' The Australian National

Audit Office (2006) states that corporate governance encompasses ‘authority, accountability, stewardship, leadership, direction and control exercised in the organisation.’ The *HIH Insurance Royal Commission Report* (2003) goes beyond these two definitions of corporate governance and states that corporate governance includes accountability, ‘not only in terms of legal restraint but also in terms of self-regulation and the norms of so-called best practice.’ The establishment of a high standard of corporate governance is dependent upon the establishment of a corporate governance culture and a code of conduct. *HB408-2006 – Corporate Governance Culture* (Standards Australia 2006a, p. 3) describes corporate governance culture as being based on transparency, integrity, and accountability. Corporate governance culture needs to be supported by a code of conduct which *AS 8002-2003 – Organisational codes of conduct* describes as ‘standards aimed at preventing corrupt and illegal practices within an entity, and ..a necessary ingredient in the corporate governance of an entity’ (Standards Australia 2003b, p. 4).

Willis (2005, p. 90) describes the objectives of corporate governance in terms of desirable outcomes including (a) fostering ethical behaviour; (b) enhancing the reputation of a business/entity (c) complying with the law (d) making the business entity more efficient and effective and (e) avoiding disasters such as HIH, Enron and One.Tel. Willis (2005) proposes that these five objectives of corporate governance can be achieved through due process, transparency, accountability, compliance, meeting applicable legal obligations and security. Willis (2005) explains that records and information management make a major contribution to achieving the objectives of corporate governance by helping deliver transparency and accountability, by demonstrating due process and compliance, by helping the organisation meet statutory and common law requirements and by providing security of personal and corporate information. Many of these factors have not traditionally been considered in determining the dimensions of information quality.

The Information Assurance Advisory Council (IAAC) (2002, p. 5) claim that whilst corporate governance has ‘long been recognised as essential to any enterprise, the ‘new economy’ has given rise to a greater demand for vigilance against ‘new’ risks. The IAAC suggest that the increased focus on corporate governance and risk management has resulted from ‘globalisation and the increased connectivity of societies, the increased speed of production cycles; the impact of new technologies; increased demands for the awareness of regulation; a greater interdependency between businesses; and an increasing skills shortage.’ The greater demand for vigilance and the increased interest in corporate governance as suggested by the IAAC has also been fuelled by decades of corporate collapses, an increase in share ownership and increased centralisation of corporate regulation (Chua & Toorn 2005, p. 3).

A common theme emerging from the study of definitions of corporate governance is the relationship between information, compliance and corporate governance. The nature of this relationship obviates the importance of (a) information quality and (b) effective information management. These two factors are discussed below.

2.2 Information Management

The transition to an increasingly digital corporate environment has brought about a blurring of the boundaries between information management, document management and records management. Prior to the advent of pervasive technology, paper documents were collated with other documents relating to the same aspect of business

into record folders. These folders were commonly managed by a central records department which held responsibility and authority for records throughout their life cycle. In today's more technical environment, electronic documents may be managed as separate items, or collated into electronic folders relating to the same business activity. While both documents and records may be saved on a central server, each employee now has responsibility for the creation and maintenance of information and records. Responsibility for disposal of electronic information, records and documents is often unassigned. In terms of Wang et al's (1998) definition of the information life cycle, employees now face responsibility for some (or all) of the four stages of the information life cycle i.e. introduction (creation), growth, maturity and decline. This can be highly problematic because many employees may possess minimal knowledge of format, storage and retention requirements for corporate information and records.

The merging of the various aspects of the task of managing information throughout its lifecycle is evidenced by the similarity between recent definitions of information, records and document management. Section A5 of *AS 5037-2005 Knowledge Management* extends Wang et al's (1998) 4-phase view of the information product life cycle and states that *information management* ..

*Supports effective and efficient management of information in the service of defined user populations. It is concerned with the study and practice of processes that enable the **creation, production, collection, organisation, storage, retrieval and dissemination** of information resources which may be in any format and available from internal or external sources.*

In section 6.10 of the same standard, document management is described as *a process for managing the life cycle of a document, from its **creation**, through to **version control, publication, organisation, storage, retrieval, retention and disposal***. *AS5037-2005 Knowledge Management* makes a distinction between *content management* (referred to as managing the dynamic aspects of information objects) and *records management* (referred to as management of corporate records that document and act as evidence of business activities).

The Australian and International Standard on organisational recordkeeping, *AS ISO 15489 Records Management (Part 1, Section 3.16)* also uses a life cycle approach to defining records management stating that -

*Records Management is the field of management responsible for the efficient and systematic control of the **creation, receipt, maintenance, use and disposition** of records, including processes for capturing and maintaining evidence of and information about business activities and transactions in the form of records.*

AS ISO 15489 also clearly identifies records as a subset of information by stating that records represent information that has been created, received and maintained as evidence in pursuance of legal obligations or in the transaction of business. This requires that aspects of recordkeeping be encapsulated into information quality.

2.3 Information Quality

The increasing recognition paid to information as a strategic resource and as a provider of evidence has 'highlighted the multifaceted nature of IQ and has increased the complexity in attempting to assure IQ (Ballou, Madnick & Wang 2004) as a component of effective corporate governance. There are many potential uses to which

data and information from organisational systems may be put and therefore (Sen 2001, p. 976) suggests that it becomes difficult 'to define measures of quality in terms of uses of the data'. Sen proposes that this is the reason why most measures of information quality are based on the 'primary data recorded and stored in the system' (p. 977). This may, in part, reflect the content management aspect as opposed to records management as outlined in *AS 5037 2005* and referred to in the previous section

Wang and Strong (1996) provide a list of sixteen dimensions of IQ arranged into four categories namely Intrinsic, Contextual, Representational and Accessibility (see Figure 1). However, close examination of these dimensions support Sen's suggestion outlined above. The measures, despite their comprehensiveness, are principally 'content' based.

The nature of the dimensions used to measure information quality need to reflect what Ballou, Madnick & Wang (2004) refer to as the transition from IQ, traditionally represented as data accuracy, to IQ within the increasingly complex context of information as (a) a strategic resource, (b) as evidence and (c) as a means of ensuring compliance. This view of information quality could be regarded as an extension of the dimensions of information quality suggested by Wang, Reddy and Kon (1995) which comprised both an internal view which referred to design operation and an external view relating to use and value of the information. Another way of conceptualising the required change in viewing information quality is to extend Wang et al's (1998) model of the life cycle of information as a product rather than to focus on the required attributes at the information creation stage.

The transition in the definitions and perceived importance of corporate governance, information management and information quality described in this section leads to a potential problem with traditional views of information quality which will be described in the next section.

4 The Problem

The potential problem discussed in this paper is that organisations and their 'leaders' may not always be supplied with sufficient appropriate information to ensure a high standard of corporate governance. Part of the reason for this situation is that information may lack the recordkeeping functionality required to ensure that information is created/captured, maintained and disposed of in accordance with a raft of regulation and legislation relating to organisational records.

The need to revisit the criteria used to assess information quality is made even more pressing by the separation of ownership and control in many large organisations. Such separation may create two problems. Rutherford, Buchholtz and Brown (2007, p. 416), describe these two problems as (a) moral hazard and (b) adverse selection. Moral hazard relates to the potential for agents (CEO's) to neglect their duties to the corporation and to act opportunistically (Levinthal 1988). Adverse selection can be described as the potential inability of principals (Boards) to verify the information provided by agents (Eisenhardt 1989). Adverse selection is likely to occur because of information asymmetry i.e. agents are assumed to possess far more information about the corporation than principals. Ideally boards possess sufficient information to

prevent both moral hazard and adverse selection but this 'first-best solution' (Holmstrom 1979; Rutherford, Buchholtz & Brown 2007) is unlikely to occur due to the 'difficulty and excessive costs associated with gathering such information, and as a result, boards are often at an informational disadvantage relative to CEOs'. Thus, one option available to boards attempting to solve agency problems is to take steps to improve their information (Eisenhardt 1989). This may prove to be a difficult task.

The difficulties in capturing and managing organisational information through effective information governance is demonstrated in the following extract from Willis (2005, p. 95)

In the modern organisation, information and events move at lightning speed. Carefully considered letters and memoranda and secretaries and file clerks have largely given way to overlapping meetings and emails and teleconferences, and doing it oneself for many operators. People talk on mobile phones while catching taxis, send emails from airport lounges or home and dial into teleconferences from anywhere in the world. People have been seen to send important instructions by text message while at a restaurant or on a bus. Other people act on the basis of that information. So good corporate governance, to meet these requirements of transparency, accountability, due process, demonstration of compliance, meeting legal obligations and ensuring security requires that the transient information be managed and the records be created, managed and available when required.

Dickins & Bishop (2007, p. 1) support Willis's viewpoint claiming that advances in technology and diverse storage locations such as personal computers, jump drives, PDAs, mobile phones and company servers can create difficulties in determining whether information pertinent to a subpoena or other document request was retained as an organisational record and posited within an organisation's information store. National Archives of Australia (2001, p. 2) add yet more credence to the arguments of Willis and Dickins stating that the spread of electronic systems has exacerbated the drift towards ad hoc or substandard recordkeeping practices. Willis and Dickins claim that the adoption of word processing, email and multi-media applications has led to a situation where the essential evidence of decisions and transactions is often kept in the hard drives, email in-boxes and/or shared folders of individual employees or work groups.

This difficulty can be significantly reduced by following best practice in records management. The difficulties in determining which of this information provides evidence of business transactions or is required to meet compliance or legislative requirements are enormous unless business information systems incorporate detailed recordkeeping functionality. Additionally every end user needs to be able to make appropriate decisions relating to factors such as what constitutes a record, in what format that record should exist, what appropriate metadata to attach to the record, what the required retention period for the record is, what the appropriate security classification is for the record and whether the record is vital or archival in nature. However, ARMA International (2002, p. 2) claim that many companies lack effective policies and procedures to guide employees in acquiring the knowledge necessary to ensure systematic control of recorded information. The result of this, according to ARMA, is that these corporations 'keep some records too long, spend too much money to store them, waste time looking for information when needed, risk penalties for non-compliance with recordkeeping regulations, and fail to protect mission-critical

information from loss or destruction.’ All of these factors negatively impact on corporate governance.

Retention is perhaps the most publicised problem associated with the lack of policies described above. Retention, which Weiss (n.d.) describes as crucial to disciplined corporate governance, refers to decisions relating to how long a record should be retained, in what format, and in what location. Weiss claims that the importance of retention is highlighted with ‘each new jury verdict and court decision that metes out severe punishments to prominent companies for mishandling their records’. Lack of effective retention policies can create a number of potential difficulties for organisations including (a) loss of time and money searching for records; (b) loss of evidence to support positions in business negotiations or in litigation; (c) breaches of employee, customer or patient privacy rights exposing a company to potential fines and adverse publicity; (d) risk of court sanctions; (e) adverse inferences in litigation; (f) charges of obstruction of justice or contempt of court; and (f) personal criminal liability. Ineffective retention decisions resulting in keeping records either (a) unnecessarily or (b) for too long can also result in exorbitant storage costs and time consuming and therefore expensive retrieval. Many organisations face problems with unnecessary storage of electronic information/documents/records because electronic storage is (a) invisible (b) widely available and (c) relatively inexpensive. Chua and Toorn (2005, p. 16) allude to the difficulties of effective destruction by claiming that it may prove difficult to ensure that retention and disposition decisions are applied to multiple copies of documents and records in decentralised environments. Despite its inherent challenges, sound record retention management is necessary for effective corporate governance.

The Information Assurance Advisory Council (2002, p. 20) uses the term information assurance to refer to the certainty that information within an organisation is reliable, secure and private. The IAAC argue that despite many companies suffering information loss as a result of inadequate or poorly managed information security, many boards and senior managers still see Information Assurance (IA) as a technical issue rather than an issue for their attention. As a result ‘IA strategies remain poorly implemented and the risks to company information remain unmitigated’ (IAAC, 2002, p. 21).

This paper proposes that the problems outlined in the previous sections can be addressed through more closely aligning recordkeeping processes with the management of organisational information in order to improve accountability, compliance, transparency, due process, security of information and evidential and other legal requirements. Such alignment should ultimately improve corporate governance. However, in creating this closer alignment it is important that organisations ensure that the selected strategies and tools for managing information do not compromise the characteristics that give records their evidential value (National Archives of Australia 2001).

5 The solution

The proposed solution as outlined in Figure 1 is based on reconceptualising Wang et al’s Information Product Life Cycle, incorporating Marchand et al’s concept of Information Orientation, and incorporating proposals for improving information quality put forward by Rikhardsson et al (2006) (internal control), Clarke (2000) (critical success factors) and Chua and Toorn (2005) (checklist).

<insert Figure 1 here>

5.1 Extending the boundaries through adaptation of Wang et al's IP Life Cycle

If one accepts that information encapsulates data, information, documents and together with the suggestion that document management (as a component of information management) encapsulates both content and records management, a search for a life cycle model that covers all of the components of information management would appear warranted. Table 1 summarises the life cycle components proposed by Wang et al (1988) as well as those proposed by AS5037-2005 and AS ISO 15489- 2002.

<insert Table 1 here>

An examination of the components of the four models of the life cycle of information shown in Table 1 suggests that dividing Wang et al's growth stage into two stages, namely use and maintenance, will allow for a consolidated information life cycle (CILC) model (see Table 2) encompassing all aspects of the information, document and records life cycle models shown in Table 1.

<insert Table 2 here>

In the consolidated information life cycle (CILC) Wang et al's original first stage of the information product life cycle referred to as introduction (creation) includes the creation, receipt (capture) and production of information. The capture stage is a critical component of records management. Appropriate capture ensures that all documentation providing evidence of business activity is captured into the recordkeeping system and that ephemera does not become part of the organisation's information store.

The original Stage 2 of Wang et al's original model has also been split into two stages ie use and maintenance. The Use stage of CILC (Stage 2) incorporates the dissemination, publication and use of information. The Maintenance stage of CILC (Stage 3) encompasses a number of records management functions. These include appropriate organisation of organisational record repositories (paper or digital), version control of documents, appropriate cost effective and secure storage and speed and security of retrieval of information contained in organisational records.

Stage 4 of CILC is maturity. From a records perspective this stage is reached when the record is no longer being added to and is no longer active. At this stage the record is rarely accessed. At this stage previous decisions relating to transfer to inactive or archival storage or disposal will be implemented. Again this is a key stage of information management. Organisational staff must be able to recognise 'mature' information and ensure that (a) evidential and archival records are retained and (b) that records which have no continuing value to the organisation as evidence or are not required under legislation or regulation are destroyed (Stage 5 of CILC). Failure to deal appropriately with 'mature' records can considerably increase information costs for an organisation.

Extending Wang et al's model of the information product life cycle as shown in Table 2 together with other aspects of the proposed solution outlined below may assist organisations in establishing a compliant information management program and improving corporate governance.

5.2 Extending the boundaries through a paradigm shift

The development of the consolidated information life cycle (CILC) model described above has been based on the blurring of the boundaries between information, documents and records. Almost two decades ago Stephens (1988) claimed that up to 80% of corporate electronic information was in the form of text files or documents as opposed 'to the structured number crunching applications that previously dominated business computing. Stephens (1988) proposed that IS departments had moved into the business of document and records management and called for records management knowledge to be applied to information and for the need for IT and records staff to work closely together. Stephens (1988, p. 9) referred to the need for a paradigm shift whereby records management moved from an 'administrative support function' to an information systems and technology function. Stephens (1988) viewed the potential records management contribution to information systems as assisting in finding solutions to (a) the uncontrolled growth of records (b) litigation risk avoidance (c) compliance with recordkeeping laws and regulations (d) permanent and long term preservation of records for archival usage.

Almost 20 years after Stephens' call for stronger collaboration between records management and information systems the need for such collaboration is receiving increasing attention. The Australian National Audit Office (2006, p. 20) found in their 2006 audit that 'Each of the entities audited had recognised that their recordkeeping responsibilities needed to be managed in the context of a broader Knowledge or Information Management framework'. This view is supported by Corbett and Wiggins (2002) who refer to the need for corporate managers and legal counsel to work closely with IT departments to understand how records management functions such as retention, storage and archiving are implemented and how issues such as backup and deletion schedules, variations in data management protocols in different locations and procedures for halting destruction/overwriting of information required to be preserved for legal reasons were handled.

Such a paradigm shift in rethinking organisational responsibilities is key to ensuring that information quality encompasses all those aspects which will ensure a high level of corporate governance. Such thinking needs to extend from senior management to the level of the individual employee as explained below.

5.3 Extending the boundaries of IQ by incorporating Marchand et al's concept of Information Orientation

Marchand, Kettinger and Rollins' (2000) concept of information orientation may represent what is needed to ensure that broad collaboration occurs in relation to the management of information assets. Marchand et al (2000) propose the concept of Information Orientation which comprises three indicators. They list these indicators as (a) information technology practices (ITP), (b) information management practices (IMP) and (c) information behaviours and values (IBV). Information technology practices may encapsulate many of the traditional dimensions of information quality. However, in today's dynamic business environment it would appear to be sound practice to extend the traditional boundaries of IQ to include information management practices and information behaviours and values. Such an extension could be justified on the basis of the need for sound recordkeeping to be incorporated into information management (IMP) in an increasingly litigious corporate environment and on the

basis of end-users needing to assume aspects of recordkeeping functionality (IBV) in increasingly technical corporate environments.

The importance of Marchand's et al's concept of Information Orientation is supported by the work of Rikkardsson et al (2006).

5.4 Extending the boundaries of IQ through internal control

The work of Rikkardsson et al. (2006) and (Rikkardsson, Rohde & Rom 2005) refers to the concept of internal control and its need to focus on two aspects. The first aspect encapsulates controlling behaviour such as use and safekeeping of resources and assets (including information assets) so that strategic, operational, reporting and compliance objectives can be reached. The second aspect refers to controlling the quality of the information that managers use in decision making or reporting to external stakeholders.

It is logical to infer that when we refer to an organisation's Information Quality, based on the work of Marchand et al and Rikkardsson et al, we need to extend the indicators to include aspects of the work of both authors relating to both information management and information behaviours and values. This can present a major challenge to organisations who may benefit from incorporating Clarke's (2000) critical success factors in bringing about required change.

5.5 Extending the boundaries of IQ through applying Clarke's critical success factors

Clarke (2000) proposes a number of critical success factors (Figure 2) needed for successful implementation of sound information management. These factors include commitment, framework, accountability, measurement, and culture.

<insert Figure 2 here>

Clarke proposes that the organisational change required to ensure sound information management and an expanded definition of information quality is unlikely to occur without firm commitment by senior management to (a) the rationale for such change and (b) to the allocation of required resources. Senior management's commitment to the required change needs to be supported appropriate strategy, policy, procedures and communication pathways. The third of Clarke's critical success factors is accountability. All staff should be aware of accountability issues relating to information management and commensurate authority should be assigned to those with accountability for various aspects of the implementation. Clarke suggests that ongoing measurement of success or otherwise of the implementation process and of the relevance of policies and procedures is also required. Finally a culture must be established where staff value information and where staff can distinguish between records and ephemera.

Clarke's critical success factors can be supplemented with the application of Chua and Toorn's checklist to the extended boundaries of IQ as encompassed in information management.

5.6 Extending the boundaries of IQ by applying Chua and Toorn's Checklist

Chua and Toorn's (2005) list of questions originally designed to apply to setting up appropriate document management can be applied in the wider context of organisational records and information. This paper does not suggest that

organisations do not already incorporate many of these aspects of records management functionality in assessing information quality. However Chua and Toorn's work provides a comprehensive list which can be employed by organisations to assess their IQ within the new extended boundaries proposed by this paper. Chua and Toorn's (2005) questions are outlined in Figure 3 and the topics to which the questions relate are discussed in the remainder of this section.

<insert figure 3 here>

Creation and capture

The first step in assuring the quality of an organisation's information could be perceived as determining which documents should be created, captured and retained in the information management system. Answering this question should involve consideration of the purpose of creation or capture eg (a) listing all sources containing records requirements relevant to the organisation (b) listing regulatory, business and other requirements to keep records (c) having a risk assessment report endorsed by management and (d) preparing a formal document setting out the organisation's recordkeeping requirements.

Storage

The second step in establishing recordkeeping requirements should address the question of How should we keep records? *AS 8000-2003: Good Governance Principles*, Section 2.3.4 states that records should be kept in accordance with *AS ISO 15489.1* and *AS ISO 15489.2* the Australian and International Standard for Records Management and with legislative requirements (Standards Australia 2003c). The method of storage will be in part determined by the intersection between information technology and records and document management within the organisation. A wide range of scenarios exist in this regard ranging from paper based recordkeeping to paper based records managed with records management software to software designed to manage organisational records in paper or digital format to electronic document management software to the latest eDRMS's which manage both documents and records.

Classification and Tagging

The third of Chua and Toorn's questions relates to classification and tagging of records. If documents, records, and information (DRI) are to be retained it is essential that they be sorted and maintained according to a system which will place the DRI into its business context, establishing responsibility and authority for its management over time and easing retrieval and access (Standards Australia 2004). This process is carried out allocating appropriate metadata to organisational information and records. *AS ISO 23081.1 Information and documentation – Records Management processes – Metadata for records* (p. 2-3) claims that metadata support a number of business and records management processes (Standards Australia 2004). These processes (Figure 4) are vital in ensuring not only information quality but also a high standard of corporate governance.

<insert Figure 3 here>

Access, retrieval, tracking and security

An essential component of effectively managing and ensuring the quality of DRI is ensuring that (a) documents, records and information are readily accessible to interested parties, (b) that they can readily retrieve the information they seek, (c) that

the organisation can track access to information and (d) that the security of personal or confidential information is assured. These processes are examples of why Barrett (cited in Willis 2005) claims that records are 'an indispensable element of transparency, both within the organisation and externally. Willis (p. 89) claims that management and disclosure of information is crucial to good governance and explains that effective maintenance of, and appropriate access to, accurate and complete information and records allows regulators or auditors, shareholders or citizens who have a right or an obligation to know what has been done to see what has been done and how it has been done. Additionally, Barrett (2005) argues that transparency enables those charged with the management of organisations to be held accountable and that transparency and accountability help deliver due process because showing how processes have been undertaken allows review, challenge and appeal.

Accompanying the need to ensure transparency through appropriate access, retrieval and tracking processes is the need to ensure the security of information. Willis (2005) stresses that those charged with corporate governance must ensure the security of information 'both in current and transient forms, and in the form of archival records. Poor information security may result in breaches of privacy, archival, contractual or confidentiality obligations and loss of 'corporate intelligence, corporate advantage or valuable intellectual property' (Willis 2005, p. 90).

Disposition

Disposition is defined by *AS ISO 15489*, Part 1, Section 3.9 as the 'range of processes associated with implementing records retention, destruction or transfer decisions.'

When a record is created and captured the appropriate retention period for that particular type of record should be identified based on relevant legislation, regulation, benchmarks or past practice. During the lifetime of the record transfer from active to inactive storage may be appropriate whilst those records classified as vital or archival will require appropriate secure storage. At the end of their useful life it is essential that records are disposed of in order to control storage costs and avoid unnecessarily long search processes. Weiss (n.d.) stresses the importance of ensuring continued confidentiality or privilege during the destruction of records at the end of their life cycle. Weiss also emphasises the importance of organisations having in place a clear process for suspending a records purge upon notice of potential litigation or other court or regulatory processes. Weiss proposes that organisations can face considerable difficulty when faced with a Litigation Hold involving electronic records. Weiss suggests that the person designated to evaluate the preservation of potentially relevant electronic evidence needs to (a) review the company's electronic information retention architecture (b) meet with IT staff re backup procedures and the company's electronic information recycling policy (c) meet with key players in the litigation to discuss how they manage electronic information (d) preserve potentially relevant electronic evidence and (e) instruct all employees to produce copies of their relevant active files and ensure that all back up media are identified and preserved.

Business Continuity

An important duty of those responsible for corporate governance is to ensure business continuity in the event of a disaster. (Pember 1996) claims that 'information risk minimisation should be an essential component of modern business risk management.' Ensuring business continuity requires the identification and protection of vital records. Vital records have been defined by State Records of South Australia (2003) as 'records essential to the organisation. Without them the organisation cannot

establish, conduct or continue business effectively.’ Information risk management should also cover the identification and protection of archival records. The Australian Science Archives Project (ASAP) claims that failure to identify and properly manage archival records can lead to ‘corporate amnesia’ and that archival records play an important role in activities such as (a) administrative continuity; (b) maintenance of corporate memory and identity; (c) corporate planning; (d) risk management; (e) internal and external accountability; (f) provision of evidence (g) public relations; and (h) providing resources for historical analysis

Evidence and litigation requirements

Both paper and digital DRI may be required as evidence or in the case of litigation. Whilst paper DRI have traditionally required careful management to ensure their acceptability as evidence or in litigation, the diverse formats of digital DRI pose new problems for organisations. Carr (2006, p. 109) defines e-discovery as the process of ‘finding and producing electronic documents in response to litigation or regulatory requirements’. The term digital forensics has been coined to describe the processes involved in discovering the many sources of digital evidence which may exist within an organisation’s DRI. Carr (2006, p 109) explains that the cost of responding to requests by civil litigants, regulators or criminal prosecutors can be very high if corporate DRI are poorly organized and difficult to search. Howell and Rubin (2007) describe the two types of information which can be gleaned through digital forensics as content information which refers to the textual data resident on the system and usage information which indicates how the system or data was used. Organisations need to ensure that all DRI are created and managed to ensure that all elements of both content and usage information are readily available in order to ‘evaluate, authenticate and give context to emails and other electronic records’ which may be required as evidence or in litigation proceedings.

Carr (2006, p 109) suggests that organisations should implement the following policies to ensure that discovery requests can be met. Firstly organisations should examine document and e-mail archiving technologies to ensure they can recover potential evidence, in addition to their backup and disaster recovery function. Secondly organisations need to revise document and e-mail retention policies. Thirdly care should be taken to delete old messages on a regular basis whilst ensuring that destruction of potential evidence can be promptly halted in response to a court order. Fourthly organisations need to determine whether data is being retained inadvertently, perhaps on individual PCs or backups from PCs, even after it has been deleted from central corporate archive. Finally organisations should investigate the use of e-discovery tools and services which can help speed the recovery of data from backup tapes or other media and shorten the time required to search for relevant information.

Email

Ghahremani (2005) describes email as the most troublesome source of electronic records and refers to the growth of email in both volume and business importance. Ghahremani reports the results of a survey by the Association for Information and Image Management which reported that 70% of respondents stated that they used email to negotiate contracts and almost 50% used it to respond to formal regulatory inquiries. Ghahremani cites Randolph Kahn founder of a consulting company specialising in compliance, policy, and legal issues related to information management as saying “Today businesses regularly execute contracts with a click,

amend them with a voice-mail message and breach them with a blog." Carr (2006, p109) explains that civil litigants, regulators and criminal prosecutors now commonly ask for copies of email communications. Users need to recognise that email could represent an organisational record, or could be required as potential evidence or could be required to comply with legislation or regulation and may be required to be retained for varying lengths of time. A clear retention policy developed by a multidisciplinary team comprising those with knowledge of relevant legislation, compliance issues, records management, lines of business and IT is essential to achieve effective email management.

Culture

Effective corporate governance requires intense collaboration at both an internal and an external level. Clarke (2000) suggests that sound information management practice requiring collaboration between eg IT staff, records management staff and end users has the potential to promote ethical conduct and reduce the risk of corruption. However, irrespective of the time taken to develop policies and processes for improving corporate governance through high quality information management, success will not be achieved without an appropriate organisational culture. Governance processes need to be aligned with the culture of the organisation. Irrespective of the nature of an organisation's culture, all staff from CEO to the most junior employee must understand the importance of documents, records and information together with their personal accountability for appropriate creation, capture, management and disposition of DRI.

Training

As mentioned throughout this document the transition to a digital records environment has placed more recordkeeping responsibility on the end-user. While the latest software packages have the potential to remove some of the recordkeeping decision making from the end user, all employees require a fundamental knowledge of their responsibilities in dealing with DRI. Such knowledge and the willingness to treat DRI appropriately are important indicators of effective information and corporate governance and as stated by Ghahremani (2005) the courts are likely to look more favourably on a bad policy enforced consistently than a great policy enforced inconsistently. Training needs to be ongoing with employees receiving consistent messages on how to deal effectively with DRI. This may require both a cultural and a behavioural change for the corporation.

The various aspects of the solution outlined in this section provide a platform for organisations endeavouring to improve information quality and corporate governance. The records management functionality discussed above should be incorporated into information and records management systems operating as part of business processes (Willis 2005). Willis (2005, p. 94) suggests that a situation where these systems are an 'add-on' or 'overhead' which occurs alongside or after the actual business processes is a recipe for disaster. In this situation, those responsible for creating the information may not be concerned with the appropriateness or implementation of the records management system while those responsible for the implementation of the information and records management systems may not be able to keep up with the pace of information.

Conclusion

Governance is about control, accountability, responsibility and authority and governance is a key issue for all organisations (McManus 2004). This paper proposes that the quality of information utilised in information and records management underpins many of the vital aspects of corporate governance. Effective corporate governance may therefore be dependant upon extending the boundaries of traditional IQ dimensions.

The paper suggests that implementing the extended dimensions of information quality may be achieved through bringing together a number of aspects of the literature relating to information quality, information management and corporate governance. The proposed solution begins with adaptation of Wang et al's model of the information life cycle to incorporate a number of aspects of information management. Secondly the paper proposes that a paradigm shift in thinking as proposed by Stephens (1988) may be required to ensure that collaboration between records management staff and information systems staff is achieved. Such collaboration is required to control the growth of records, avoid litigation, comply with a raft of laws and regulations and to ensure preservation of vital and archival records. Thirdly the proposed solution addresses the cultural change that may be required in achieving this reconceptualisation of information quality. Marchand et al's concept of information orientation together with Rikhardsson's 'internal control' are considered as being useful to bringing about such behavioural and attitudinal change. Finally the proposed solution suggests that the implementation of effective records and information management based on the extended dimensions of IQ could be assisted by the adoption of Clarke's critical success factors together with Chua and Toorn's checklist of questions which can be applied to assess the soundness of information management processes.

With the increased regulation of public companies caused by the Sarbanes-Oxley Act, corporate perspectives on records management are in transition from that of records management as a 'cost-centre' to that of information as a key corporate asset and its management as a strategic imperative. The increasingly digital environment accompanied by the plethora of locations in which documents, records and information can be created, maintained or deleted has dictated the need for records management functionality to be regarded as a core criteria in assessing the quality of an organisation's information. This paper provides a possible solution to bringing about the required extension to the traditional boundaries of IQ in order to bring about improvement to information management processes and corporate governance.

List of References

- Anderson, A, Herring, P & Pawlicki, A 2005, 'EBR: The Next Step', *Journal of Accountancy*, vol. 199, no. 6, pp. 71-4.
- ARMA International 2002, *Information management: a business imperative*, viewed 01 June 2005, <http://www.arma.org/odf/rim_imperative.pdf/>.
- Australian Science Archives Project (ASAP)*, University of Melbourne, <http://www.asap.unimelb.edu.au/asap_pro.htm>.
- Australian National Audit Office 2006, *Performance Audit: Audit Report No. 6 2006-2007 - Recordkeeping including the Management of Electronic Records*, Commonwealth of Australia, Canberra.
- Australian Stock Exchange 2003, *Principles of Good Corporate Governance and Best Practice Recommendation*.
- Ballou, D, Madnick, S & Wang, R 2004, 'Special Section: Assuring Information Quality', *Journal of Management of Information Systems*, vol. 20, no. 3, pp. 9-11.
- Barrett, P 2005, *Presentation to National Archives of Australia Advisory Council*, 11 August 2000, <www.anao.gov.au/WebSite.nsf/Publications/4!256AE90015F69B4A25694B0003839B>.
- Carr, DF 2006, 'E-Discovery', *Baseline*, no. 66, pp. 109-.
- Chandler, TB & Wardwell, WC 2006, 'Best Practices For Documenting Board Meetings', *Corporate Board*, vol. 27, no. 159, pp. 10-16.
- Chua, Q & Toorn, CV 2005, *Documents, risk and the fate of your organisation: Document management in the age of corporate accountability*, WHITE PAPER.
- Clarke, M 2000, 'Ethics and Records Management', paper presented to Records Management Association of Australia State Conference Qld, 01 August.
- Corbett, RJ & Wiggins, RB 2002, 'Electronic Discovery Surpasses Paper Filings in M&A Regulatory Reviews', *Mergers & Acquisitions: The Dealmaker's Journal*, vol. 37, no. 11.
- Dickins, D & Bishop, ML 2007, 'Board Document Retention: Five Best Practices', *Corporate Board*, vol. 28, no. 164, pp. 12-5.
- Eisenhardt, KM 1989, 'Agency theory: assessment and review', *Academy of Management Review*, vol. 14, no. 1, pp. 57-74.
- Ghahremani, Y 2005, 'An ounce of retention', *CFO*, vol. 21, no. 13, pp. 45-7.

- HIH Insurance Royal Commission Report, 2003, Commonwealth of Australia, viewed 11 April 2005, <www.hihroyalcom.gov.au/finalreport/>.
- Holmstrom, B 1979, 'Moral hazard and observability', *The Bell Journal of Economics*, vol. 10, pp. 74-91.
- Information Assurance Advisory Council 2002, *Engaging the Board: Corporate Governance & Information Risk*, IAAC.
- Levinthal, D 1988, 'A survey of agency models of organisations', *Journal of Economic Behavior and Organization*, vol. 9, pp. 153-85.
- Marchand, DA, Kettinger, WJ & Rollins, JD 2000, 'Information orientation: People, technology and the bottom line', *Sloan Management Review*, pp. 69-79.
- McManus, J 2004, 'Working Towards an Information Governance Strategy', *Management Services*, vol. 48, no. 8, pp. 8-13.
- National Archives of Australia 2001, *The DIRKS Manual: A Strategic Approach to Managing Business Information*, Commonwealth of Australia, viewed 15 June 2006, <<http://www.naa.gov.au/recordkeeping/dirks/dirksman/part1.html#bg2>>.
- Pember, M 1996, 'Information disaster planning: an integral component of corporate risk management', *Records Management Quarterly*, vol. 30, no. 2, pp. 31-6.
- Queensland Government 2003, *Best Practice Guide to Recordkeeping*, Queensland Government.
- Radner, G 2006, 'Board Communications In The Internet Age', *Corporate Board*, vol. 27, no. 159, pp. 17-20.
- Rikhardsson, P, Rohde, C & Rom, A 2005, *Exploring Enterprise Systems and Management Control in the Information Society: Developing a Conceptual Framework*, Las Vegas, USA, 10-11 December 2005.
- Rikhardsson, P, Best, P, Green, P & Rosemann, M 2006, *Business Process Risk Management, Compliance and Internal Control: A Research Agenda*, Melbourne.
- Rutherford, MA, Buchholtz, AK & Brown, JA 2007, 'Examining the Relationships between Monitoring and Incentives in Corporate Governance', *Journal of Management Studies*, vol. 44, no. 3, pp. 414-30.
- Sen, K 2001, 'Does the measure of information quality influence survival bias?' *International Journal of Quality and Reliability Management*, vol. 18, no. 9, pp. 967-81.
- Standards Australia 2002, *AS ISO 15489.1 Records Management: Part 1*
- 2002, *AS ISO 15489.2 Records Management: Part 2: Guidelines*.

- 2003a, *AS 8002-2003: Organisational Codes of Conduct*, Standards Australia, Sydney.
- 2003b, *AS 8003-2003: Corporate Social Responsibility*, Standards Australia, Sydney.
- 2003c, *AS 8000-2003: Good Governance Principles*, Standards Australia International Ltd, Sydney.
- 2004, *AS ISO 23081.1: Information and documentation - Records Management Processes - Metadata for Records*.
- 2005, *AS 5037-2005 Knowledge Management*, Standards Australia, Sydney.
- 2006a, *HB 408-2006: Corporate Governance Culture*, Standards Australia, Sydney.
- 2006b, *AS 3806-2006: Compliance programs*, Standards Australia, Sydney, NSW.
- State Records of South Australia 2003, *Records Management Disaster Planning* http://www.archives.sa.gov.au/files/management_guidelines_ARM_disasterplanning.pdf
- Stephens, D 1988, 'Megatrends in records management', *Records Management Quarterly*, vol. 32, no. 1, pp. 3-6, 8-9.
- Tapscott, D & Ticoll, D 2003, *The Naked Corporation: How the Age of Transparency will Revolutionize Business*, Free Press.
- Treasury Board of Canada Secretariat – Information Management Division 2004, *Framework for the management of information in the Government of Canada*, Draft Version 1, <http://www.tbs-sct.gc.ca/fmi-cgi/standard-norme/risk-risque/risk-risque_e.doc>.
- Wang, RY & Strong, DM 1996, 'Beyond accuracy: What data quality means to data consumers', *Journal of Management of Information Systems*, vol. 12, no. 4, pp. 5-33.
- Wang, RY, Reddy, MP & Kon, HB 1995, 'Toward quality data: An attribute-based approach', *Decision Support Systems*, vol. 13, no. 3-4, pp. 349-72.
- Wang, RY, Lee, YW, Pipino, LL and Strong, DM 1998, 'Manage Your Information as Product', *Sloan Management Review*, Summer, pp. 95-105.
- Weiss, CN n.d., *Corporate Governance - The Importance of a Compliant Record Retention Program*, ABA Section of Business Law: Practical Resources for the Business Lawyer.
- Willis, A 2005, 'Corporate Governance and Management of Information and Records', *Records Management Journal*, vol. 15, no. 2, pp. 86-97.

Figure 1: IQ, RIM and Corporate Governance

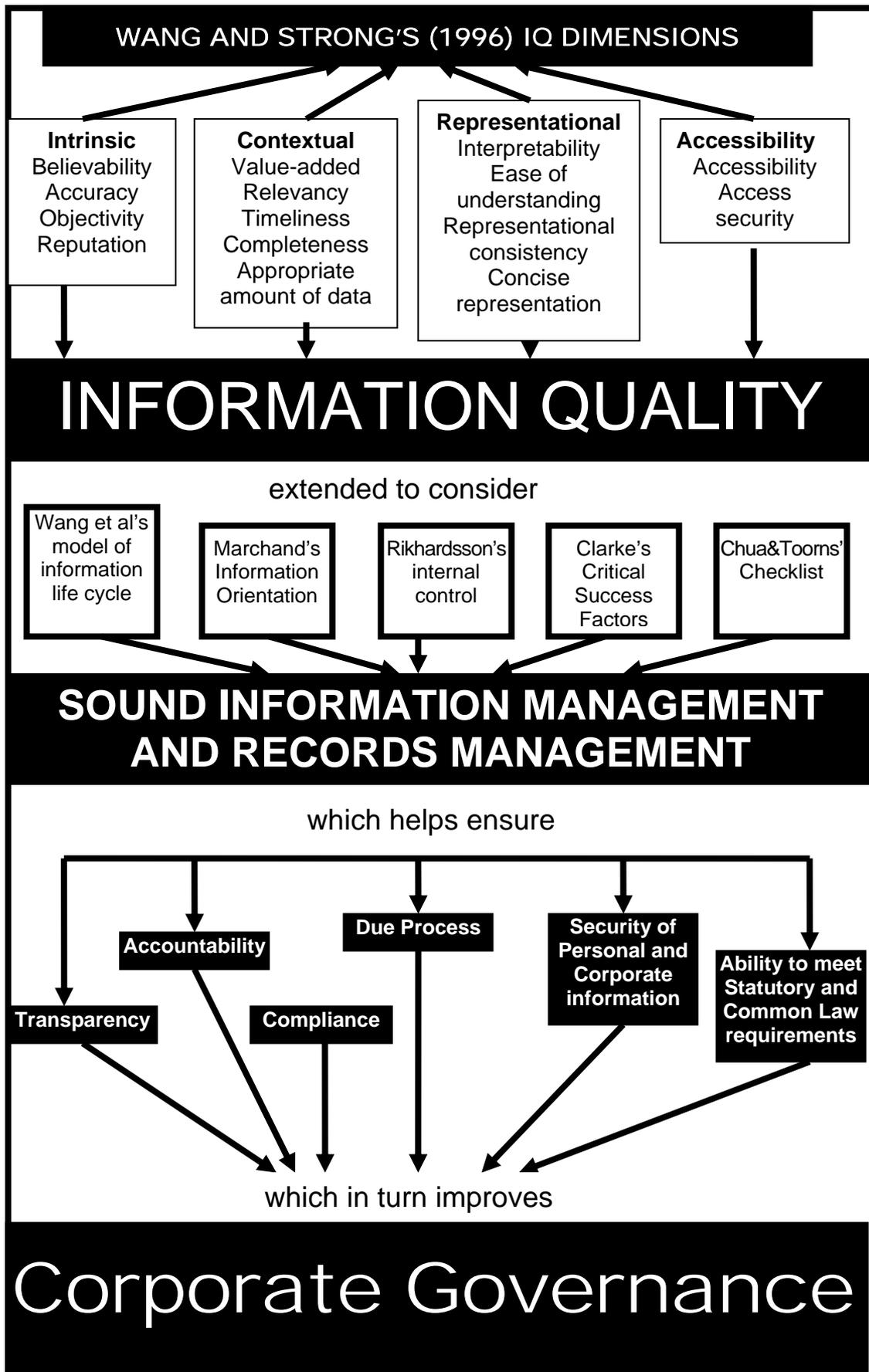


Table 1: Four perspectives on the Information Life Cycle

| | | | |
|---|--|---|---|
| <i>Wang et al (1988)</i> | <i>AS 5037-2005 Knowledge Management, section A5</i> | <i>AS 5037-2005 Knowledge Management Section 6.10</i> | <i>AS ISO15489-2002, Part 1, section 3.16</i> |
| Information Product Life Cycle | Information Management Life Cycle | Document Life Cycle | Records Management Life Cycle |
| 1 Introduction (creation) | Creation | Creation | Creation |
| 2 Growth | Production | Version Control | Receipt |
| 3 Maturity | Collection | Publication | Maintenance |
| 4 Decline | Organisation | Organisation | Use |
| | Storage | Storage | Disposition* |
| | Retrieval | Retrieval | |
| | Dissemination | Retention | |
| | | Disposal | |

*AS ISO 15489 defines disposition as either the disposal of records or the permanent storage i.e. archiving of records of continuing value.

Table 2: Consolidated Information Life Cycle Model (CILC)

| | | | |
|---|--|---|---|
| <i>Wang et al (1988)</i> | <i>AS 5037-2005 Knowledge Management, section A5</i> | <i>AS 5037-2005 Knowledge Management Section 6.10</i> | <i>AS ISO15489-2002, Part 1, section 3.16</i> |
| INFORMATION PRODUCT LIFE CYCLE | Information Management Life Cycle | Document Life Cycle | Records Management Life Cycle |
| 1 Introduction (creation) | Creation Production | Creation | Creation Receipt (Capture) |
| 2 [Use] | Dissemination | Publication | Use |
| 3 [Maintenance] | Collection Organisation Storage Retrieval | Version Control Organisation Storage Retrieval | Maintenance |
| 4 Maturity | | Retention | Disposition* |
| 5 Decline | | Disposal | |

*AS ISO 15489 defines disposition as either the disposal of records or the permanent storage ie archiving of records of continuing value.

Figure 2: Critical Success Factors for successful implementation of sound information management

| SF's | Description |
|----------------|--|
| Commitment | CEOs and senior management must understand and be seen to be fully committed to the principles of information management. This commitment needs to be demonstrated and supported by appropriate training for all relevant officers |
| Framework | The organisation must have clearly defined information management policies and objectives, supported by standards and procedures. These must be effectively communicated to, and understood by, the relevant staff within the agency |
| Accountability | The responsibility and accountability for carrying out the information management policies must be clearly defined and communicated throughout the organisation. These responsibilities and accountabilities must be accompanied by commensurate authority |
| Measurement | The means for measuring the successful implementation of information management practices must be identified, documented, audited and reviewed on a regular basis to ensure that these measures are being applied and that they remain current |
| Culture | An environment should be created where information is valued, and only that information which is required for the agency to perform its business functions is captured and maintained. |

Adapted from Clarke, M 2000, 'Ethics and Records Management', paper presented to Records Management Association of Australia State Conference Qld, 01 August.

Figure 3: Chua and Toorn's checklist for ensuring records management functionality within Information Quality?

| | |
|--|--|
| Creation and Capture | What documents should be created and captured/retained in the DRI system? What is the purpose for creation? |
| Storage | How will DRI be stored? Paper-based? Digital? What form of digital storage? |
| Classification and tagging | How will DRI be classified for storage? How will unstructured documents be managed? What metadata will be required? |
| Access, retrieval, tracking and security | Who will have access to the retained DRI? How will speedy retrieval and ease of access to DRI be assured? How will privacy be addressed? How will audit trails for DRI usage be established? What security will be implemented to protect privacy and maintain authenticity? |
| Disposition | How long should DRI be retained? When should DRI be transferred from active to inactive storage? Which DRI should be archived? At what stage should DRI be archived? What is the organisation's DRI destruction policy? Which DRI should be destroyed? How regularly? Who has authority to approve destruction of which category of DRI? |
| Business continuity | Which business DRI should be considered as vital records? How will vital DRI be maintained? |
| Evidence and litigation requirements | How will DRI integrity be maintained? How will authenticity be verified? How will the organisation ensure that electronic DRI are acceptable evidence? How will the organisation respond quickly and effectively to demands for DRI in cases of litigation? |
| Dealing with email | How do email policies fit into the DRI management policy framework? |
| Organisational culture | How will the organisation inculcate a culture of ethical behaviour and active risk management in relation to DRI management? |
| Staff training | Who is responsible for DRI training? What content should be included in DRI training programs? |

**Chua and Toorn's original questions related only to document management*

Source: Adapted from Chua, Q & Toorn, CV 2005, *Documents, risk and the fate of your organisation: Document management in the age of corporate accountability.*

Figure 4: Metadata contributions to business and records management processes

- Protecting records as evidence and ensuring that accessibility and usability through time
- Facilitating the ability to understand records
- Supporting and ensuring the evidential value of records
- Helping to ensure the authenticity, reliability and integrity of records
- Supporting and managing access, privacy and rights
- Supporting efficient retrieval
- Supporting interoperability strategies by enabling authoritative capture of records created in diverse technical and business environments and their sustainability for as long as required
- Providing logical links between records and the context of their creation, and maintaining them in a structured, reliable and meaningful way
- Supporting the identification of the technological environment in which digital records were created and the management of the technological environment in which they are maintained in order that authentic records can be reproduced as long as they are needed, and
- Supporting efficient and successful migration of records from one environment or computer platform to another or any other preservation strategy

Adapted from *AS ISO 23081.1-2004 : Information and documentation - Records management processes - Metadata for records. Part 1: Principles*, Standards Australia International Ltd, Sydney, 2004, 0 7337 6325 1.