AALBORG UNIVERSITET
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PROJECT WORK IN
MASTER OF INFORMATIONSFORVALTNING
& RECORDS MANAGEMENT (MIR)

MODULE 4 – MASTER THESIS

Implementation of Records Retention,
Preconditions and assessment of drivers, obstacles, success factors and approach for the implementation of the Retention process

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Abstract

Det kan være ulike motiver for å implementere Records Retention (arkivforvaltning). Det kan være av rent praktiske årsaker, som å spare penger, redusere risiko eller for å etterleve lover og regler. Med det som utgangspunkt er det hensiktsmessig å forstå hva begrepet egentlig innebærer. Jeg har derfor gjennomgått retningslinjer utarbeidet av ulike profesjonelle interesse-organisasjoner som kan sies å være autoriteter på området. Listen med krav viste seg etterhvert å bli ganske lang, noe som kan være en medvirkende årsak til at mange selskaper har valgt å utsette eller har problemer med å innføre Records Retention.
I oppgaven har et utvalg selskaper, hovedsakelig innenfor olje og gassrelatert virksomhet, vært gjenstand for en utspørring hvor hensikten har vært å etablere en bedre forståelse for mulige sammenhenger mellom selskapets modenhet innenfor Information Management (IM), og hvor langt de er kommet med innføring av Records Retention. For å kunne besvare dette har det vært nødvendig å forstå hvilke forutsetninger som legges til grunn, hva som er drivere og hva selskapene ønsker å oppnå.
Undersøkelsen bekreftet at bare et fåtall selskaper mener de har etablert retention. En annet interessant funn viser at det kan være flere ulike motiver som er avgjørende for innføring. Mulige juridiske konsekvenser som følge av manglende etterlevelse av lover og regler ser ikke ut til å være et viktig argument for innføring av retention. Det er fortsatt store forskjeller på europeisk og amerikansk lovgivning, spesielt i forhold til konsekvenser i form av størrelsen på mulige erstatningskrav. Det er mye som tyder på at selskaper som opererer i Skandinavia ikke har de samme insentiver for å innføre Records Retention. Avhengig av hvilket motiv man har, vil det være behov for å i verksette ulike tiltak. Oppgaven vil bidra til å identifisere hvilke krav som må etterkommes for å oppnå selskapets målsetting.

Vi ser også at de fleste selskapene scorer lavt i forhold til modenhet innen Information Management. Innføring av Retention krever kvalifiserte og dedikerte ressurser som har støtte fra ledelsen.
Det har vært påfallende å registerere at Information Management som funksjon ikke har funnet sin plass i organisasjonen. Det kan skyldes at IM er en relativt ny disiplin som fortsatt har en vei å gå for å kunne rettferdiggjøre sin eksistens. Rent organisatorisk ser vi at den ofte legges inn under IT. Dette er i følge flere sakkyndige ikke spesielt hensiktsmessig. Det er viktig at IM er forankret hos en ledelse som har forståelse for at utfordringene for å nå et høyere modenhetsnivå innfor IM ikke bare er av teknisk karakter, men også av organisatorisk og kulturell karakter. Forutsigbare rammebetingelser er viktig.
I følge Gartner vil innføring av Enterprise Information Management (EIM) kreve tid og ulike tiltak må gjennomføres som en del av et koordinert program, ikke et enkeltstående prosjekt.

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Introduction

Eric Schmidt, CEO of Google, has indicated that "*Between the birth of the world and 2003, there were five exabytes of information created. We [now] create five exabytes every two days*". The phrase Information overload was introduced by Alvin Toffler, (Toffler, 1980) when he predicted that the rapidly increasing amount of information being produced would eventually cause people problems. Ned Hallowell (Hallowell, 2015) has identified the negative neurological effects of information overload by describing it as 'attention deficit trait (ADT)'. The core symptoms are distractibility, inner frenzy, and impatience. People with ADT have difficulty staying organized, setting priorities, and managing time. An industry watch issued by AIIM (Miles, 2014) states that organisations are stabilising the volume of paper records, but electronic records are increasing rapidly in 68% of organisations surveyed. It is also an increased pressure on institutions to demonstrate their accountability and compliance with various acts and regulations.

Records Retention Management is one of several initiatives that should be considered to meet the challenges related to the exponential information growth. Records Retention is a major component of any comprehensive Records and Information Management program. It is intended to give organisations guidance on the length of time to retain information and when it can be legally destroyed.
The future value of a record could be difficult to define as it is important to have in mind that the modern archives are kept for others than those created them. (R.Schellenberg, 1956). Regulations are well defined and implemented for historical information within the public sector, but not within the private sector.
Based on own observations, it could appear as many companies have made little progress implementing the Records Retention Management process in their organisation.
The purpose of this thesis will be to understand what efforts have been made, what have been their motivation, and to what extent the Information Management maturity level represents a relevant factor.

Problem Statement

In order to understand the efforts made when implementing the Records Management process, it is relevant to identify the Information Management maturity level. The maturity level could be used as an indicator to assess the current status. Questions that will be addressed in this thesis are:

- What does it take to implement Records Retention?
- Are companies aware of the efforts needed to reach a full implementation?
- What is the current status related to the implementation of the Retention Management process?
- What is perceived as the maturity level of Records Management?
- What is considered to be the consequences of not implementing retention?
- What appears to be the main benefits for implementing retention?
- What could be important success factors when implementing retention?
- What will ensure a successful operations of the retention process when it is in place?

Limitations

- Main focus will be on unstructured and digital information
- Information handled by Social media, cloud based applications and mobile devices are not given special attention.
- The findings will to a large extent be based on input from companies in the Oil & Gas industry.
- Only the retention part of the Information Lifecycle will addressed.
- Physical information will not be paid much attention

Ethical considerations

The information Management maturity level could by certain companies be regarded as sensitive information. Realising a low maturity level or imperfection might be difficult to admit. The similar problem could occur if the research work reveals findings that could be considered as a competitive advantage. It has been necessary to communicate the purpose of the research work and details about the confidential procedures. Proof has been provided to assure that confidential data such as the result of the web survey and transcriptions from the interviews will be anonymised.

Literature and theory

Definitions

Records Retention

Records Retention is one of the major components of any comprehensive Records and Information Management program.
It is intended to give organisations guidance on the length of time to retain information and when it can/must be legally destroyed. (AIIM)

Retention Management

Involves the delineation of activities designed to carry out effective and defensible Records Retention. It allows records professionals to determine the length of time records need to be kept for business and legal purposes ARMA TR 27-2015, (Retention Management for Records and Information, 2015)

Disposition

The range of processes associated with implementing Records Retention, destruction or transfer decisions which are documented in disposition authorities or other instruments. (ISO 15489-1).
For a record, the final action taken per the retention schedule, concluding with destruction, transfer or permanent preservation. (ARMA TR 27-2015)

Information Quality

Wang and Strong (Richard Y. Wang, Diana M.Strong, 2015) propose a list of dimensions or elements used in assessing Information Quality:

- Intrinsic IQ: Accuracy, Objectivity, Believability, Reputation
- Contextual IQ: Relevancy, Value-Added, Timeliness, Completeness, Amount of information
- Representational IQ: Interpretability, Format, Coherence, Compatibility
- Accessibility IQ: Accessibility, Access security

Methodology

The scope of work has necessitated use of different methodologies. Gartner has developed a model to define the Enterprise Information Management maturity level. This model has been used to better understand the characteristics for each maturity level. A Discourse methodology has been used to analyse a set of standards and guidelines. And finally, qualitative and quantitative methods have been used to perform an interview and a web survey. A combination of these methods could be valuable according to Kaplan (Kaplan & Duchon, 1988), since the study of organisations includes many unknown and not controllable objects, and the methods of the natural sciences are not always applicable.

Maturity level

There are various models identifying the Information Management maturity level. For the survey, the intention has been to identify the perceived maturity level. IVI (Innovation-Value-Institute, u.d.) has developed an IT Capability Framework with a scale that was practical for the purpose of the survey.
For the analysis it has been required to use a different model describing the actual level of Information Management. Gartner is a well-recognised organisation and their maturity model (EIM Maturity Model, 2008) provides a detailed description of each level, including reference to records retention. According to Gartner, organisations cannot implement Enterprise Information Management as a single project. They must implement it as a coordinated program evolving over time. The maturity model consists of six levels in the range Unaware to Effective. Organisations cannot skip stages or the associated activities without introducing weaknesses into their EIM programs.

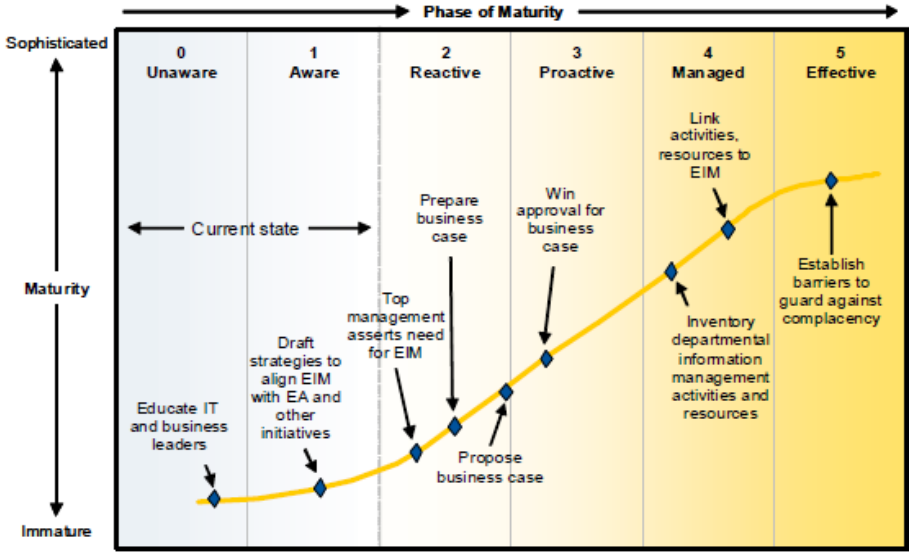


Figure 1 - Gartner's Maturity Model

Gartner's model for Enterprise Information Management maturity level could be used to understand what level is required to implement Records Retention. Relevant statements from the maturity model indicates that the maturity level need to be in the range Reactive to Proactive.

- Metrics focus on expiration dates for information, files and other electronic forms to address known compliance risks. Other metrics shows disproportionate numbers of spreadsheets circumventing ERP controls. Data redundancy statistics show significant overlaps in master data assets. (Reactive)
- The organization enforces guidelines for archiving data and retention periods. It collects and organizes metadata for reuse. (Proactive)

It is not the objective to decide the correct maturity level of the respondents. The perceived maturity level within the organisation will be used as reference when analysing the overall situation derived from the survey.

Discourse analysis

The discourse analysis will help understand what efforts must be made to implement Records Retention by identifying the related requirements. According to Martyn Denscombe (Denscombe, 2010), the methodology is a cost-effective method and source data will be permanently available and can be checked by others. The four stages proposed by Norman Fairclough (Fairclough, 1989), was used for the analysis and elaborated as part of the dissertation work.

Selection of sources (1)

The list of sources has been limited to the most influential actors in this field, such as ISO Standards, DLM Forum Foundation, ARMA, and AIIM (see appendix 3, Records Retention Authorities). Some of the material has been restricted and was not general available via the intranet. In such case the documentation has been acquired via commercial channels or via other contacts.

Description (2)

The analysis has concentrated on what is relevant for the retention process. The different sources express requirements in different ways. It could be as statements or a sentence that might express multiple requirements.

Interpretation (3)

The objective of the interpretation has been to structure the requirements in a consistent manner. Statements might not express a requirement clearly. In such case the requirement could be an interpretation of the initial text. Overlapping statements leading to the same requirements, have been removed.

Explanation (4)

The final list of requirements have been classified into different areas. For this purpose I have chosen to organise requirements into:

- Information
  Requirements that will help identify the scope. The retention schedule will describe location, media, file formats and Content types (See Appendix 1 – Definitions) etc. to be included (or not included).
- Information System
  Requirements that describes functionality that must be in place to support the Records Retention process. A system in this context could also be a manual operations.
- Process
  Requirements that describes how to manage and support the information handling process.
- Organisation
  Requirements related to roles and responsibilities.

Qualitative Methodology

Qualitative methods will enable a detailed observation of the object of study, and allow the researcher not to commit to any previous theoretical constructs and hypothesis. As the quantitative survey has the disadvantage of not providing in depth insight, the survey will be supplemented by a limited number of standardised open-ended interviews.
The questions have been pre-determined, but the respondents have been allowed some latitude to answer in their own way and the interviewer may probe for more information in promising areas as in an exploratory interview.

This technique has been selected to,

- Avoid personal bias.
- Collect large amount of data in a short time, since each interview is expected to last 2 hours.
- Permit further clarification
- Align and compare information from different contacts

Sampling

Suitable contacts have been identified by use of Snowball sampling. Possible candidates were approached at an early stage to ensure their availability and to confirm their participation. It has been important to identify persons with deep knowledge of the research field.
The location for interviews has been organised according to the contacts preferences. The contacts were approached to schedule the dates for the meetings in order to avoid busy periods and to agree on best time of the day.
The respondents were informed that the survey data will be confidential, and in the report, all respondents will be made absolutely anonymous.
It was considered that 7 respondents should be sufficient for the qualitative approach.

Question construction

The interview was a combination of open ended questions which enabled the respondent to elaborate, and questions with multiple choice options. Use of terms and jargon have been kept on a level that assures a common understanding. A list of definitions (see separate chapter and appendix 1) of the main terms have been presented and agreed upon prior to the interview. The questions from the interview have also been used in the user survey. It was expected that findings from the interviews could have consequence for the survey.

Data collections

A structured schema (see appendix 2, Interview template) has been used to ensure consistency. Supplementary notes were used to elaborate on some question. It has also been important to be attentive to new data that could influence the research questions during the session.

Data Analysis

A transcript of each interview was made. The interviewees received a copy of the transcript for validation or correction. The transcripts were analysed individually before starting the cross comparison. This result has been compared with the result from the quantitative approach for correlation or disassociation. Response bias has been managed by focusing on the main trends or exclusion. In the figure 2, Company A was been left out from the Sum column as they did not respond to several questions. The comments from the interviewees have been given high attention.

Data reduction

The respondents have been given a possibility to rank several factors using a scale. Responses with same occurrence have been counted, or aggregated. Not all questions have been considered as equally important. Insignificant findings have been left out. Responses were respondents have been asked to do ranking have been merged into one table as illustrated in Figure 2.

Data organisation

For the purpose of the analysis, the population has been split between Oil & Gas and other industries were this has been deemed relevant. The spilt makes it possible to exclude potential variations not representative for Oil & Gas. The rating of the various questions have been accumulated and sorted according to importance. The respondents are anonymised by use of letters.
The score has been transformed into percentage to be able to compare findings between industries.

	SUCCESS FACTOR	A	B	C	D	E	F	G	Sum	%
G8	IT must play a key role in the implementation of Retention				7		5	5	N/A	N/A
G9	Strong involvement of the organisation during the project phase							9	N/A	N/A
G2	Dedicated and qualified resources	10	10	8	10	8	8	10	54	14,5 %
G7	Knowledge of relevant requirements regarding Retention rules		7	9	9	10	10	9	54	14,5 %
G6	Consistent Classification scheme and file plans		9	10	8	10	6	9	52	14,0 %
G3	Management Support	8	6	8	9	10	8	10	51	13,7 %
G4	Defined Business Case	8	10	8	9	10	5	9	51	13,7 %
G5	A complete inventory of important company information		5	8	8	10	5	9	45	12,1 %
G1	Organisational Maturity	2	4	8	6	7	5	7	37	9,9 %

Figure 2 - Illustration of Data Analysis, Reduction and Organisation

Quantitative Methodology

The methodology used in the survey for data collection, analysis, reduction and organisation is quite similar to what has been done during the interviews. The survey has been accomplished using a web based survey tool. Different web tools are available. The free version of Survey Gizmo was selected, even though it had some limitations. https://www.surveygizmo.com/

The same questions were used during the interviews, but some questions have been modified or excluded, based on feedback, to ensure the best possible quality.

It has been important to design the survey that was not time consuming or difficult to understand. The indications given by the tool related to: estimated length, fatigue score and accessibility were reassuring.

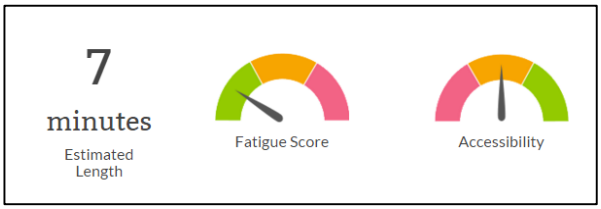


Figure 3 - Survey Diagnostics

Selection of population

40 individuals from various companies have been identified based on Snowball sampling. The individual should have sufficient knowledge and the right background to be able to respond to the survey.
An initial e-mail was issued to explain the purpose and to obtain permission.

30 companies responded, 3 disapproved and 27 approved. In total 25 individuals did respond which gives a response rate of 92.5%. Five responses were disqualified as they were incomplete. Some responses have been accepted as complete even though they were partial. This could influence the total number of responses for some of the questions.

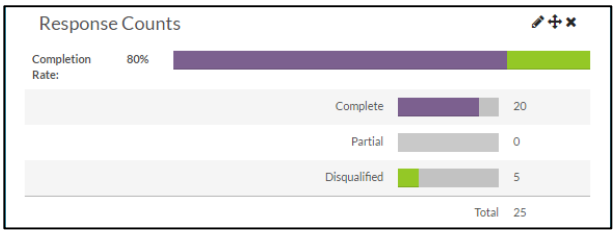


Figure 4 - Response Counts

Five types of industries were represented, but the intention has been to focus on Oil & Gas. Of the 11 Oil & Gas companies, 6 are defined as Head Quarter.
16 of the respondents have a role within Information Management, and 12 are responsible for the IM process.

Value	Percent	Count
Oil & Gas	55.0%	11
Public Administration	25.0%	5
ICT	5.0%	1
Culture & Leisure	5.0%	1
Other	10.0%	2
Total		20

Figure 5 - Industry Sector

Value	Percent	Count
IM Sponsor	10.0%	2
IM Process Owner	60.0%	12
IM Support	10.0%	2
Other	20.0%	4
Total		20

Figure 6 - Company Role

Findings

Records Retention requirements

Based on findings from interviews and the web survey, we have seen that companies have various motives for implementing Records Retention. There is an extensive list of organisations and agencies that have issued guidelines defining requirements related to Records Retention. It may however, seem unrealistic to implement the complete list as it is difficult to align requirements to business objectives.

Interview

All seven interviewees have the role as IM process owners and represents the Oil & Gas industry.
The majority regards that they have medium influence to implement change or improvements related to RM in the organisation. The competence in the RM field is considered to be rather high.
The organisational dependency of the IM function is quite divergent. There is a consensus that the IM function should not report to IT or be divided between different organisational units. Only one of seven companies claims to have implemented Records Retention.

WEB Survey

The score has in some cases been converted to % as the aggregated score cannot be used to compare the result between the industries.

Influence

What best describes the Records Management function in your company?
The influence appears to be slightly higher within Oil & Gas compared with other industries.
Both populations seems to be in line when they indicate that both Influence and Competence are at a medium level. The respondents have indicates that the RM function is not sufficiently acknowledged by the management.

Value	Percent	Count
Low Influence - Medium Competence	5.0%	1
Low Influence - High Competence	5.0%	1
Medium Influence - Low Competence	10.0%	2
Medium Influence - Medium Competence	45.0%	9
Medium Influence - High Competence	25.0%	5
High Influence - Medium Competence	5.0%	1
High Influence - High Competence	5.0%	1
	Total	20

Figure 7 - RM influence

Resources

To what extent do you have the resources needed to implement change or improvements related to RM?
There are no significant differences between the two populations when it comes to the resources with ability to implement changes.
The predominant ability is medium.

Value	Percent	Count
Low	15.0%	3
Medium	70.0%	14
High	15.0%	3
	Total	20

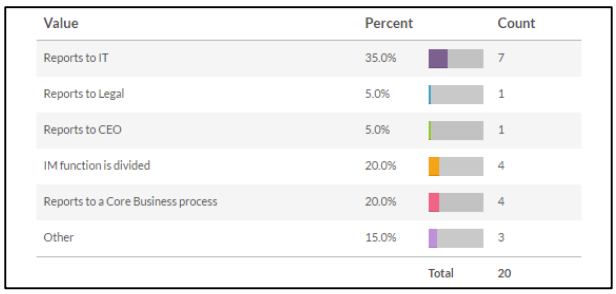
Figure 8 - RM Resources

Organisation

What is the organisational dependency of the IM/RM function?

The majority of companies within the Oil & Gas industry reports to IT. This applies also for the other population. Several respondents have indicated that the IM/RM function should not report to IT.

The main argument is the difference when it comes to business focus.



Value	Percent	Count
Reports to IT	35.0%	7
Reports to Legal	5.0%	1
Reports to CEO	5.0%	1
IM function is divided	20.0%	4
Reports to a Core Business process	20.0%	4
Other	15.0%	3
	Total	20

Figure 9 - Organisational dependency

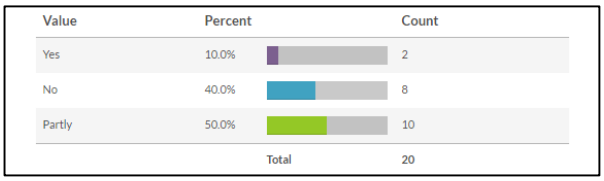
Statements from the interviews:

- *IT is a support process, IM is not regarded as a dedicated support process, but are strongly integrated in all business* processes.
- *IT is not the best organisational dependency due to technical focus and lack of overall business focus.*
- *IT is a provider of services for IM. It could be difficult to make complaints to close colleagues. The optimal solution would be a staff function reporting to the management team. IM is not regarded as a traditional support function.*
- *IM/RM should be regarded in the same way as Legal, HR and Finance.*
- *If IM is part of the Data Management function this might favour Geology & Geophysics (G&G) at the sacrifice of e.g. subsurface.*
- *IM need to have a close link to Legal.*
- *IT has a technical focus. Overall business focus is important. IT is responsible for Information Security.*
- *IM will have low priority if organised as part of IT.*
- *HR and Finance lack of the competence needed to promote IM in the organisation.*

Information

Have documents been classified according to importance?

Only 10% of the respondents are able to differentiate important documents from less important. Classifying documents according to importance would help reduce the scope. The majority of documents have often low value and should not be given much attention.

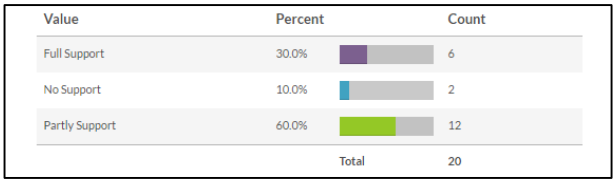


Value	Percent	Count
Yes	10.0%	2
No	40.0%	8
Partly	50.0%	10
	Total	20

Figure 10 - Information Classified according to importance

To what extent is the main archive system able to support the Retention Management process?

Records Retention is dependent on functional support. Only 30% claims that the main archive system supports Records Retention.



Value	Percent	Count
Full Support	30.0%	6
No Support	10.0%	2
Partly Support	60.0%	12
	Total	20

Figure 11 - Functional support

Is there a clear distinction between systems which manage working documents and those which manage records?

The majority of companies mix records and working documents in the same system. Initiatives have started where new systems support a better differentiation.

Value	Percent	Count
Yes	40.0%	8
No	40.0%	8
Partly	20.0%	4
	Total	20

Figure 12 - Records and Working documents

Retention Management

What is the company's status related to the implementation of the Retention Management process?

35% of the respondents have not implemented Records Retention. 30% states that Records Retention is fully implemented. Input from the interviews indicated that Records Retention is regarded as fully implemented as long as it addresses the critical Content types.

Value	Percent	Count
Fully implemented	30.0%	6
Partly implemented	35.0%	7
We are in process with implementation	10.0%	2
Planned, but not started	15.0%	3
No plans for implementing Retention	10.0%	2
	Total	20

Figure 13 - Retention Status

Maturity

The perceived maturity level has been split between industries to ensure a correct presentation of Oil & Gas. The overall maturity level is rather low also for other industries. The results from the interviews have been included.

RM Maturity Level	Oil&Gas	Other
Initial	3	1
Basic	4	3
Intermediate	9	3
Advanced	2	2
Optimised	0	0
Don't know		

Figure 14 - Maturity Level

Risk

At a global level, what do you consider to be the main risks to which your company is exposed?

We observe that both populations have indicated that the main risks are related to 'Loss of intellectual properties or confidential information', and 'Loss of customer confidence or bad publicity'. If we compare results for the Oil & Gas industry with the result from the interviews, we find that the responses are not aligned with exception of the risk for 'Criminal prosecution' which in both cases has been ranked at the bottom. The main risks derived from the interviews are the 'Inability to respond to or take right decisions' and 'Violation of industry-specific compliance regulations'.

Risk	Other	O&G	Risk
Loss of intellectual property or confidential information	17 %	14 %	Loss of customer confidence or bad publicity
Loss of customer confidence or bad publicity	16 %	14 %	Loss of intellectual property or confidential information
Inability to respond to requests or take right decisions	15 %	13 %	Considerable litigation cost or damages
Reduced data vulnerability for hacking	14 %	13 %	Inability to respond to requests or take right decisions
Audit remarks	14 %	13 %	Reduced data vulnerability for hacking
Considerable litigation cost or damages	10 %	12 %	Violation of industry-specific compliance regulations
Violation of industry-specific compliance regulations	9 %	12 %	Audit remarks
Criminal prosecution	4 %	10 %	Criminal prosecution

Figure 15 - Risk findings Survey

Sum	Risk
52	Inability to respond to requests or take right decisions
52	Violation of industry-specific compliance regulations
46	Loss of intellectual property or confidential information
46	Audit remarks
43	Loss of customer confidence or bad publicity
37	Considerable litigation cost or damages
35	Reduced data vulnerability for hacking
24	Criminal prosecution

Figure 16 - Risk findings Interview

Benefits

To what extent could the implementation of Records Retention improve the situation in your company?

There are some minor differences in the ranking of benefits between the two populations. They both agree that the main benefit is that Implementation of Records Retention will improve the information quality. Records Retention will result in better consistency in management of records and information, and better utilisation of company knowledge.

The benefit 'Improved Information Quality' has been excluded from the result of the interview as the number of respondents were too low. As for the survey, the factor 'Consistency in management of records and Information' has been given a high score. 'Reduced storage and infrastructure cost' is not regarded as a significant benefit.

Benefits	Other	O&G	Benefits
Improved Information quality	13 %	13 %	Improved Information quality
Consistency in management of records and Information	13 %	13 %	Better utilisation of company knowledge
Prerequisite for better search	12 %	12 %	Prerequisite for better search
Will help educate the staff in to obtain better understanding of RM	12 %	12 %	Consistency in management of records and Information
Better utilisation of company knowledge	11 %	11 %	Improved operational efficiency
Improved operational efficiency	11 %	9 %	Will help educate the staff in to obtain better understanding of RM
Protection during litigation or government investigation	8 %	9 %	Reduced storage and infrastructure cost
Reduced storage and infrastructure cost	7 %	9 %	Faster response to events, accidents, press, activities, FOI, Enquires
Faster response to events, accidents, press, activities, FOI, Enquires	7 %	7 %	Protection during litigation or government investigation
Better reputation/improved shareholder value	6 %	5 %	Better reputation/improved shareholder value

Figure 17 - Benefit findings Survey

Sum	Benefits
N/A	Improved Information quality
60	Consistency in management of records and Information
49	Faster response to events, accidents, press, activities, FOI, Enquires
49	Improved operational efficiency
46	Protection during litigation or government investigation
44	Better utilisation of company knowledge
40	Will help educate the staff in to obtain better understanding of RM
37	Prerequisite for better search
35	Better reputation/improved shareholder value
28	Reduced storage and infrastructure cost

Figure 18 - Benefit findings Interview

Success Factors

On a general level, how would you weight the importance of these factors when implementing Retention Management process?

'Management support' and 'Dedicated and qualified resources' are regarded as the main success factors by all populations. There is however, a significant gap between the current situation and what would be the required level. This might seem as a contradiction with the results from the interview were the majority of the respondents indicated that the RM Staff had Medium Influence, but High Competence. At the same time the ability to implement change or improvements related to RM is regarded as medium or low. 'Management Support' is also regarded as an important factor, but here we find that the respondents are satisfied with the level of support given by management.

'Knowledge of relevant requirements regarding Retention rules' is not regarded as a critical success factor. 'Defined business case' should also be given some attention as it is defined as rather important, but the delta between current- and required level is quite high.

Assessment of Sucess Factors	To-Be	As-Is	Delta
Dedicated and qualified resources	81	40	41
Management Support	82	41	41
Defined Business Case	72	40	32
Organisational Maturity	71	41	30
A complete inventory of important company information	72	42	30
Knowledge of relevant requirements regarding Retention rules	68	46	22
Consistent Classification scheme and file plans	68	53	15
IT must play a key role in the implementation of Retention	69	63	6

Figure 19 - Success factor findings Survey

Assessment of Success Factors	To-Be	As-Is	Delta
Dedicated and qualified resources	54	43	11
Knowledge of relevant requirements regarding Retention rules	54	36	18
Management Support	51	45	6
Defined Business Case	51	39	12
A complete inventory of important company information	45	36	9
Organisational Maturity	37	33	4
Consistent Classification scheme and file plans	52	N/A	N/A
IT must play a key role in the implementation of Retention	N/A	N/A	N/A

Figure 20 - Success factors Interview

Operation

How would you rate the importance of the following factors in ensuring successful operation of the Retention process?

The responses given indicated that 'Functional support' is the most important factor together with a 'Centralised function responsible for the process'. The result for 'Functional support' and 'Sourcing of generic processes' have been left out due to response bias for the interviews.

Operation	Other	O&G	Operation
Functional support for the complete disposal process	15 %	13 %	Centalised function responsible for the process
A Retention Management process that requires only a minimum of user	15 %	13 %	Functional support for the complete disposal process
Centalised function responsible for the process	14 %	13 %	Active maintenance of the Retention schedule
Automatic conversion to sustainable file formats	13 %	13 %	Differensiate between Archive system and Collaboration systems
Active maintenance of the Retention schedule	12 %	13 %	A Retention Management process that requires only a minimum of user
Automated Event triggers	12 %	12 %	Sourcing of generic processes (or processes were knowledge is lacking)
Differensiate between Archive system and Collaboration systems	10 %	12 %	Automatic conversion to sustainable file formats
Sourcing of generic processes (or processes were knowledge is lacking)	9 %	11 %	Automated Event triggers

Figure 21 - Operational findings Survey

Sum	Operation
N/A	Functional support for the complete disposal process
N/A	Sourcing of generic processes (or processes were knowledge is lacking)
63	Centalised function responsible for the process
60	Automated Event triggers
59	Differensiate between Archive system and Collaboration systems
59	A Retention Managment process that requires only a minimum of user intervention
55	Automatic conversion to sustainable file formats
35	Active maintenance of the Retention schedule

Figure 22 - Operational findings Interview

Comments from the Interview

The comments relates to the different questions in the questionnaire. See appendix 2 Interview Template.

- A5: Mergers and extensive growth will have serious impact on the capacity and quality of the RM function
- A6: RM initiatives seems to have low priority in periods with focus on cost cuttings
- A6: Important to align local initiatives with global road maps (relevant for affiliates)
- A7: RM function is not organised in a consistent manner. It appears as the functional responsibility changes as part of organisational changes
- A8: As IT is an important service provider to IM, the relationship shouldn't be too familiar
- A8: IM should not report to other service functions due to different focus or lack of understanding
- A8: Organising IM under a Core process could also result in unequal service level across the organisation
- A8: The ideal organisational dependency for IM appears to be as a staff function reporting to the Management team
- A9: Most companies seem to have several overlapping systems for unstructured information
- A10, A13: Classification according to importance seems to be partly implemented. No clear distinction between Records and working documents. Many companies have ongoing initiatives to establish such classification.
- A11: Retention Management functionality is occasionally configured or supported by the main archive system
- A11: RM functionality is often a separate module. The DM module is adapted to provide RM functionality to the extent possible
- A12: Historical records or records due for Long Term Preservation (LTP) are seldom migrated to appropriate file format
- A12: Migration to LTP format could be a good candidate for outsourcing
- A12: A pending issue is how to manage MS Excel files
- A12: PDFA seem to be the preferred format for LTP

Analysis

Records Retention requirements

It turned out that organising the complete list of requirements and classifying them according to business objectives was a very extensive exercise. Given the time frame, it was decided to only describe the proposed approach. The methodology could be further elaborated as it would reduce the work of implementing Records Retention. It could be difficult to separate requirements related to Records Retention Management from requirements related to the Records Management. An efficient Records Retention process is dependent on the entire Information Lifecycle. Implementing the retention process will require an Information System that provides the required functionality, and an organisation that has received sufficient training. A full implementation could be challenging without a solid foundation. The IM maturity should be at least at a Reactive level.

Companies within the same industry share legal requirements. It should be possible to exchange best practices and to obtain synergies. It is a paradox that there is little cooperation between companies in this domain. This could be due to bad timing, different priorities or lack of an applicable arena for knowledge sharing.

Organisation

Historically the responsibility of Information Management was decentralised and carried out by secretaries and other support functions. The introduction of Personal Computers has been a paradigm were the responsibilities have been moved to each individual. The lack of a strong and central function responsible for IM processes, has led to different practices and unwanted user behaviours.

The information growth and increased focus on compliance have forced companies to dedicate resources to improve the situation. As IT has been responsible for the application support, it has been convenient to delegate the responsibility for IM to IT as well. The experience obtained indicates that this might not be the optimal solution. Comments from the interviews states that IT and IM have different business focus. IM staff would like to be recognised as an independent discipline acting on its own. The entire organisation is dependent on IM support. Measures should be taken to avoid that organisational dependency favours one business unit before another.

Risk

It is difficult to point out the main risk within the Oil & Gas industry as it differs when we compare the result of the interviews with the survey. We could say that different risks are regarded as equally important with the exception of criminal prosecution which seem to be given a low score. This might be due to European legislation which still is less harsh than in US. EU's General Data Protection Regulation might change this as the consequences of incompliance could be fines up to 4% of the global gross turnover.

Benefit

We have seen that implementing Records Retention requires a high level of Information Management maturity in terms of quality of information and metadata, understanding of legal requirements, system support and a competent organisation. This will result in a consistent management of records and information.

This again will ensure better utilisation of company knowledge. 'Improved Information quality' has been ranked as the highest benefit during the survey and the interview. A high Information Management maturity will ensure integrity which again will have consequences for the quality.

Storage and infrastructure is less expensive than before. It is often regarded as cheaper to add more disk than to do a manual clean-up.

Success Factors

We can observe that organisational maturity is not ranked very high. Several interviewees pointed out that dedicated and qualified resources were the most important factor. Unfortunately they also claim that this is not in place. The main effort will be to establish the processes related to the Information Lifecycle. This has to be done by IM staff, prior to involving the rest of the organisation. The system must guide the users. If classifying and storing information is a time consuming process, the consequence could be that users develop unwanted behaviours.

Operation

A well-established Records Retention regime must be nurtured. Mergers and acquisitions becomes more and more a normal. It takes time to re-establish status-quo after an extensive reorganisation, especially when key-personnel have left the company during such processes.

Records Retention is a complex exercise and it is not regarded as realistic to let the users decide retention rules. The system must help the user apply the correct retention rule based on various factors such as Business process, Document Type etc. The Information Architecture is vital and it requires centralised control, qualified and dedicated resources. If the system is correctly configured, the need for maintenance of the Retention schedule will not take a lot of effort. Retention rules have to be maintained, but this doesn't happen that frequent.

Maturity

Most companies consider their RM maturity level to be rather low. Some companies did not have resources able to respond to the questions raised in the survey. This observation correspond to the findings made by Karen Anderson (Anderson, 2012). "*Some uncertainty about who should answer the survey questions, indicating lack of assigned 'ownership' of IM strategies and development".*

Information Management seems to be an immature discipline that is not well established in most organisations. We have seen that the IM function is not organised in a consistent manner. The unit is often moved between departments during organisational changes. The staff could have the required level of competence, but lack the ability to implement changes or improvements. Information is located in overlapping information systems. Important information is not classified according to importance and Metadata Management is not implemented. The Information Systems are not able to support or not configured to manage Records Retention.

This could be due to the difficulties in presenting positive effects of IM related to cost cutting or savings. It is easier to relate the effects to mitigating risks, but this is not always sufficient.

Many Oil & Gas companies have affiliates that need to harmonise their activities across the group. This complicates the implementation due to different priorities, legislation or requriements.

Records Management is not a project that has a start and end date. It is a continuous process that need constant attention. Earlier achievements have declined due to periods with less focus and priority.

Conclusion

What does it take to implement Records Retention?
As it could be unrealistic to comply with all requirements, measures for implementation should focus on requirements related to the specific business objectives. Based on the maturity level different actions could be made to prepare for the final implementation. The various measures must be executed in the correct sequence. It is not possible to skip stages or activities to reach a higher maturity level.

Are companies aware of the efforts needed to reach a full implementation?
The IM staff seems to have an adequate level of competence to understand what efforts will be needed, but the organisational dependency and lack of consistent focus over time in terms of management support and funding, makes it difficult to reach a higher maturity level.

What is the current status related to the implementation of the Retention Management process?
Only a few companies claims to have implemented Records Retention. This corresponds to the assumption that many companies have made little progress implementing the process in their organisation. Companies that have implemented Records Retention have in most cases established a process that manages only the most critical Content types.

What is perceived as the maturity level of Records Management?
It is difficult to decide the actual maturity level without a more detailed analysis. The responses are based on perception. It could be fair to say that the results are quite consistent as the majority consider the level to be intermediate. This is a maturity level that makes the implementation of Records Retention challenging.

What is considered to be the consequences for not implementing retention?
It is not a particular risk that has been identified that could be the justifying reason for implementing Records Retention. This could be related to the difficulties in defining well-established business cases. From similar studies made in the US, we have seen that criminal prosecution and litigation cost are identified as significant risks. This is still not the situation in Scandinavia. The General Data Protection Regulation that was recently approved by EU will most likely make a difference as the new regulation will imply heavy fines for regulatory breaches.

What appears to be the main benefits for implementing retention?
It has been stated that implementation of retention will have a positive impact on the information quality. This could be difficult to accept without further analysis. Based on the definition of the term Information quality by Wang and Strong, we could see that the Retention process have impact on the quality both directly and indirectly. Directly it could influence factors such as: believability, timeliness, format and accessibility. Indirectly Records Retention will require a high level of 'Consistency in management of records and information'. The overall benefit will be 'Better utilisation of company knowledge'.

What could be important success factors when implementing retention?
Dedicated and qualified resources have been considered as the most important success factor. This correlates with Gartner's EIM maturity model which states that IM is a coordinated program that evolves over time. The Retention process should be implemented in manner that doesn't require special knowledge by the individual user. The RM system should guide and help the employee to make the right choices.

What will ensure a successful operations of the retention process when it is in place?
Records Retention will involve anything that shows proof of business activity, which is considered an official records within the company. In order to achieve this a centralised function for the process will be

mandatory. Eliminate processes that are time consuming or requires highly skilled resources. It is also important to keep key-personnel during periods with down-sizing. Such personnel includes information owners or personnel with insight in historical documents. A proper hand-over should take place prior to termination of employment.

There are only a few companies that state that they have implemented Records Retention. There are many professional organisations that provides help and guidelines, but the list of requirements are quite extensive. This makes it difficult to find a practical approach. It appears as there are no primary reason for implementing Records Retention in the Scandinavian countries. This differs from companies in US were liability for compensation often is listed as the main threat.
The Information Management maturity level is at a rather low level which explains partly why the process of Records Retention is pending. As long as we are not able to come up with a well-documented Business case, it will be difficult to obtain management support. Records Management requires highly skilled staff and predictable frame conditions. A paradox might be that the IM function in some large organisations is maintained as a part time function or by personnel lacking the required competence.

We often hear the expression that we have managed so far, so why do we need to invest time and money implementing Records Retention? This is a commonly used excuse. Why should we buy an insurance, why should we install an alarm? The point is that we tend to implement preventive measures after the incident has occurred. New legislation, e.g. EU's Data Protection Directive, will give the authorities the power to impose much higher penalties than before. This could have serious consequences for most companies. We should not wait until it is too late.

Recommendations

Think big start small. Select one business process and Content type as a pilot and finalise the implementation of Records Retention. Experience will tell if a full implementation could be justified. Establish collaboration with other companies within the same industry and seek for synergies. Exchange best practices and methodology. Establish routines or campaigns for cleaning or deleting obsolete information. Consider outsourcing of labour extensive or inessential task. Such tasks could be to develop and maintain the retention schedule. Identification of legal requirements requires specific knowledge that could be difficult to find within own organisation. External requirements applies for most companies within the same industry and could be manged via joint efforts. Migration of records to sustainable file formats for long term preservation could be a good candidate for sourcing.

IM maturity Level

Identify the Information Management maturity level of the company using the appropriate methodology. The maturity level will help understand what measures could be realistic to implement. Apply measures that reflects the actual maturity level. Remember it is not possible to skip stages and activities without introducing fatal weaknesses into their EIM programs.

- Unaware:
  Appoint IM responsible, Identify risks, build a business case, develop a Road Map
- Aware:
  Differentiate between working documents and records. Establish Masterdata vocabularies. Develop Governance.
- Reactive:
  Implement a Records Management system supporting Retention
- Managed:
  Develop a Retention schedule. Implement retention for critical Content Types
- Effective:
  Include all Content Types in the retention process

Business case

Define the business objective for implementing Records Retention in alignment with all affiliates.
The business case should make it apparent for the management that information could give a competitive advantage they should exploit in order to create value and increase efficiency. Illustrate relevant consequences.

- Reduce Cost
  - 1 of 10 spend more than 45 minutes per day searching for information
  - 43% states that they often do not find required information, need to do the job twice
- Reduce obsolete Information
  - Lost business opportunities due to unavailability of information
  - Wrong or bad decisions due bad information quality
- Ensure information you are entitled to keep for ever
  - Lost information of historical value
- Ensure disposal of information you are *not* entitled to keep
  Avoid audit remarks
- Risk mitigation
  - Incidents and accidents
- Comply with Legal Hold
  - Liability for compensation

Based on the rationale for implementing Records Retention, different requirements will be of significance. The requirements could be grouped into areas such as Information, Information System, Process and Organisation. Figure 24 illustrates that various requirements would apply based on business objective. *Item 7 – The potential risk of not being in compliance with retention rules are identified*, is not necessarily of High Importance if the objective is to reduce cost. Note that the figure is made for illustration purposes only and the codification High, Medium and Low is also for illustration purposes.

Item	Area	Requirement	In place	Reduce Cost	Reduce obsolete	Long Term	Must Dispose	Legal Hold
1	Information	Social media content has been assessed to be/not to be included in the Records retention process		M	M	L	M	L
2	Information	Records are systematically classified with appropriate metadata for retention purposes		H	H	H	H	H
3	Information	The information Inventory has grouped Information according to ownership, content types and retention rules		H	H	H	H	H
4	Information	There is a complete inventory of all Information systems affected by the Records Retention		H	H	H	H	H
5	Information	A specific Information Inventory is being maintained for each Information System concerned		H	H	H	H	H
6	Information	A list of supported file formats for different stages of the information Lifecycle is prepared		M	M	M	M	L
7	Information	The potential risk of not being in compliance with retention rules are identified		L	M	M	H	H
9	Information	Records are systematically disposed according to the Retention schedule		H	H	L	L	L
9	Information	The integrity of records are sufficiently maintained		L	L	L	L	H
10	Information	Records due for Long Term Storage are systematically migrated to an appropriate file format and media		M	L	H	L	L

Figure 23 - Records Retention Requirement

Information Handling Process

Retention and disposal cannot be detached from the information lifecycle. Decisions made during capture, classification, storage, distribution and maintenance will affect the disposition process.
If possible the Retention schedule should define the destiny of any record at the time of creation.

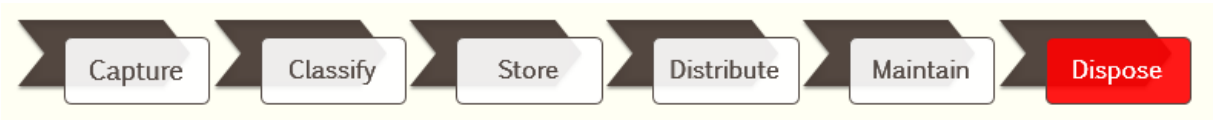


Figure 24 - Information Lifecycle

Implementing Records Retention is dependent on governance during the full information lifecycle.
In the capture process decisions are made such as which file format to use. The classification process is probably the most important activity as it will ensure easy retrieval, access control, ownership and retention rules. Information should be stored in dedicated locations. Duplications should be avoided.

Information

Establish an information inventory of business critical information. Focus on information that requires special attention, such as confidentiality, integrity and retention. The inventory should classify information according to information categories and Content types. Business process, ownership and location should be included. It could also be beneficial indicate potential consequences of not being in compliance with rules and regulations. The inventory will help new employees to understand where to find information and who is the owner. The Information owner will define requirements and responsibilities. Information process owner could use the Information inventory as a planning tool and to maintain requirements

Organisation

Build a dedicated team with complementary skills within IM. Give them the mandate to develop an enterprise information management program with realistic deliverables that generates added value. Ensure that the IM function has the optimal organisational dependency. The main criteria will be to ensure the right focus and a consistent level of management support over time.

Information System

Build a structured retention schedule that will serve all systems affected by retention. Group information objects that share common retention rules. Implement processes to identify events that will influence the retention periods. It is not realistic to expect that the end users will be able to apply the correct retention rules. It is important that the Information System can assist the user to make the right decisions. A successful implementation is dependent on a well-considered information architecture.

Records Management should not be first in line for cost cutting. This will not only slow down the process of increasing the level of Information Management maturity, but it will most likely also decrease the existing level.

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