



AC⁺erm Project

Systematic Literature Review:
Critical Success Factors



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The AC*erm Project – Accelerating positive change in electronic records management' – is a research project carried out by the School of Computing, Engineering and Information Sciences in Northumbria University from 2007 to 2010. It aimed to investigate and critically explore issues and practical strategies to support accelerating the pace of positive change in managing electronic records.

The project focused on designing an organisation-centred architecture from three perspectives: (i) people, including vision, awareness, culture, drivers and barriers; (ii) working practices including processes, procedures, policies and standards; and (iii) technology in terms of the design principles for delivering effective recordkeeping.

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AC⁺erm Output

Systematic Literature Review Synthesis – Critical Success factors

Background *General*

We have carried out a systematic literature review (SLR) of journal literature on electronic records management (ERM) published from 1996 to February 2009. SLRs aim for a more objective, rigorous approach to reviewing the literature. The objectivity and rigour comes from establishing elements *a priori* and following a standard process, particularly for assessing the quality of the literature and extracting relevant data.

We searched for variants of the term 'electronic records management' in the following databases: LISA (covering information studies and technology, library science and publishing); EBSCO's Business Source Premier (including coverage of business, management, engineering, law, health and art); and Web of Science (covering the sciences, social sciences & the arts and the humanities). We have reviewed 1,189 from a total of 1,756 items and selected 536, to date, for detailed review.

Information from the reviewed items have been organised into an Access database. Components of the database include: tickboxes for subject focus and for coverage of specific topics (such as model for ERM, change management) and a textual summary. Assessing the quality of the item has been through the use of tickboxes for resource type, approach type and reviewer evaluation. The use of tickboxes means that we can choose items from the database that cover specific topics only. The items on a specific topic are then synthesised by identifying themes from the summary and organising the items under appropriate headings.

Selected outputs from the SLR have been used to inform the initial questions for our Delphi studies as well as to provide practical information to enable action by users of the outputs.

This Output

Contains items of literature which have been coded as covering the topic 'critical success factor'. The items were chosen from the database on 2010/03/18. It aims to provide practical information.

Nature of Output Brief summaries of items from the literature, organised under headings with bibliographic details.

SYSTEMATIC LITERATURE REVIEW – SYNTHESIS OF CRITICAL SUCCESS FACTORS - 2010/03/18

Articles that have been coded as containing coverage of critical success factors.

Total number of articles: 72

Note: Items that refer to the same organisation: 480 and 592; 570 and 755; 591 and 661; 717 and 1025.

Example of item ID code: #3 2005 HMM

- Character: # case examples, * research, £ individual expert opinion
- Number = ID number from EndNote bibliographic database
- Date
- Weighting: Resource H M L / Approach H M L / Reviewer's Evaluation H M L, where H = High, M = Medium, L = Low

Notes:

- Some items are duplicated under different headings.
- Under each heading, items are in reverse date order, except for articles on the same organisation which are grouped together.

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GLOSSARY

CSF	critical success factor
EDMS	electronic document management system
ERM	electronic records management
ERMS	electronic records management system
IS	information system
LIS	library information system

1. LIST OF CRITICAL SUCCESS FACTORS

Critical success factors (CSFs) have been listed in this section, organised under categories with specific CSFs listed under each category. The AC⁺erm Project looked at ERM from the three perspectives, i.e. People, Processes and Technology. The relevant perspective(s) is indicated against each of the categories. For each CSF the ID code of the item has been given. To find out more about the source of these CSFs look in Section 2, where each item of literature is organised in ID number order.

1.1 Critical success factors for the implementation of EDMS/ERMS etc.

Implementation projects are not just IT projects (covers People, Processes, and Technology Perspectives)

not just IT projects £587 2003 MMM

focus 20% of effort on technology, 80% on cultural issues £872 2006 MMM

equal emphasis on technology, processes and people #163 2006 HMM

primarily operational #326 2004 HMM

more about change management #732 2005 MMM

pay attention to macro-level politics and processes #1025 2003 HMH

Commitment and support of CEOs (covers People Perspective)

commitment and support of directors/CEOs £1366 2007 HMM, *524 2006 MHH,

#481 2005 MML, #502 2005 HHH, #732 2005 MMM, £587 2003 MMM, #588 2003

MMH, #352 2001 MMM, #607 2000 HML,

establish and maintain board awareness £587 2003 MMM, #588 2003 MMH

empower the project team, if senior management not involved themselves #662 2005 HMM

Project aligned with business objectives (covers Processes Perspectives)

align the project with enterprise planning imperatives/organisation's business

objectives and priorities *524 2006 MHH, #481 2005 MML, #250 2004 HMM

include the project in corporate management and business plans #588 2003 MMH

business-user involvement *524 2006 MHH

Project has clear agenda (covers Processes Perspectives)

driving agenda #481 2005 MML

vision #3 2005 HMM

business case #588 2003 MMH

risk analysis £#768 2005 HML

Good system design (covers People, Processes and Technology Perspectives)

product standards #1089 1998 HML

systematic design methodology #1089 1998 HML

data management *510 2005 HMM

document management support for WISs #1089 1998 HML

trustworthy £#768 2005 HML

usability £#768 2005 HML, £1368 2007 HML

user friendly #*755 2005 HMH

simple to use #*755 2005 HMH

transparent process, minimise staff effort £972 2006 MMM

focus on processes; don't just automate existing processes £872 2006 MMM

don't automate a process if it is better done with 'paper' £80 1996 MMM

work processes adapted to the Web #1089 1998 HML

minimise changes in work practices £#768 2005 HML
use fileplan developed for paper records, with minor changes #313 1997 MMM
access controls #662 20005 HMM, #1025 2003 HMM
control documents at point of origin #946 2005 HML

Demonstrate benefits (covers People and Processes Perspectives)

demonstrate/communicate the benefits for both the organisation and users #480
2005 MML, #591 2005 MMM, #588 2003 MMH, £80 1996 MMM
show individual benefits first, then organisational ones £872 2006 MMM
phased approach allows users to see benefits #686 2002 HMM
small change/system implementation paving way for later ERMS #748 2005 HMM

Procurement planned and requirement-driven (covers Processes Perspectives)

requirement driven specification when choosing the system #592 2006 MMM, £587
2003 MMM, #588 2003 MMH
procurement framework *524 2006 MHH
for cross-public sector implementations - staggered so not to overwhelm the market
*524 2006 MHH and with full consideration of the technology market place *524 2006
MHH
licensing, vendor ownership, sustainability £1368 2007 HML

Integrated systems and technology (covers Technology Perspectives)

integration of systems and technology #480 2005 MML
integration with existing/planned business and infrastructure environments £1368
2007 HML, #1025 2003 HMM
integration of EDMS and RMS £1080 1999 HMM

*Involvement at all levels within the organisation and with external stakeholders
(covers People Perspectives)*

project board with good understanding of issues, the organisation and its staff #591
2005 MMM+ #661 2005 MMM
strong framework for the direction of the project #732 2005 MMM
involve senior management #588 2003 MMH
governance committee/project team, with membership from all functional areas
£1366 2007 HMM, #662 2005 HMM
consult all departments and user groups #1025 2003 HMM
RM and IT input critical from the outset #502 2005 HHH
continuing RM input essential #502 2005 HHH
leveraging existing expertise #946 2005 HML
local champions/support staff/implementation in local areas/work groupings #592
2006 MMM, #662 2005 HMM, #732 2005 MMM
shared ownership #481 2005 MML
co-operation, liaison between stakeholders #3 2005 HMM, #481 2005 MML
vendor partnerships £1368 2007 HML
small organisations can react quickly and staff have a greater commitment to the
organisation #591 2005 MMM+ #661 2005 MMM

Communication (covers People Perspectives)

communication £1366 2007 HMM, *524 2006 MHH, £872 2006 MMM, #502 2005
HHH, #662 2005 HMM, #588 2003 MMH, £80 1996 MMM
promotion of system £#768 2005 HML
multiple methods and approaches #502 2005 HHH
liaise with other projects #502 2005 HHH

Change management (covers People Perspectives)

change management £1366 2007 HMM, #480 2005 MML, #502 2005 HHH, #662 2005 HMM, #732 2005 MMM, £#768 2005 HML, £587 2003 MMM, #588 2003 MMH
change champions from all functional areas £1366 2007 HMM, #686 2002 HMM
power users from each work section #502 2005 HHH
involve staff at different levels, and those pro and con the change £872 2006 MMM
convincing staff of the benefits of the change #480 2005 MML
manage user expectations £972 2006 MMM
understand how the new system changes workflow, communication dynamics \$872 2006 MMM
allow time for change #502 2005 HHH

Planning and project management (People and Processes Perspectives)

planned, structured approach to implementation £1366 2007 HMM, #480 2005 MML, #502 2005 HHH, #661 2005 MMM, #732 2005 MMM
benefits realisation stage #502 2005 HHH
four tactics: policies, design, implementation, standards #313 1997 MMM
phased approach #592 2006 MMM, #732 2005 MMM, #686 2002 HMM
practical guides to managing the stages #3 2005 HMM
single responsibility *524 2006 MHH, 481 2005 MML
continuing responsibility with RM unit #502 2005 HHH
effective project management *524 2006 MHH, #502 2005 HHH, #588 2003 MMH
project team motivated and supportive of each other #662 2005 HMM
project staff and administration support for larger projects £1366 2007 HMM, #502 2005 HHH, #588 2003 MMH
use of external independent consultants #732 2005 MMM, #588 2003 MMH
indicate time commitment from managers and staff in business plan #502 2005 HHH
taking the necessary time #3 2005 HMM, #570 2004 MML
deadlines to focus attention of staff #502 2005 HHH
keep sight of the big picture £872 2006 MMM
system to go live when staff on training course #502 2005 HHH
monitor for problems £80 1996 MMM
seek feedback £80 1996 MMM
proactive response to problems/feedback £80 1996 MMM

Prior existence/development of necessary 'infrastructures' (covers Processes and Technology Perspectives)

necessary IT infrastructure already in place #504 2006 MMM
RM infrastructure £1366 2007 HMM, #502 2005 HHH, #*755 2005 HMH, #1025 2003 HMH, #686 2002 HMM
RM skills essential #502 2005 HHH
necessary good working practices already in place #504 2006 MMM
RM development as preparation for implementation of an EDRM #526 2003 MML
taxonomy £1366 2007 HMM
functional classification scheme critical #502 2005 HHH
don't bother with a thesaurus #*755 2005 HMH
new fileplan adopted across the organisation before the EDRM rollout #732 2005 MMM

Piloting and testing (covers People, Processes and Technology Perspectives)

pilot #480 2005 MML, #662 2005 HMM, #732 2005 MMM, £80 1996 MMM

'model office' to validate the system prior to pilot/rollout #732 2005 MMM, #570 2004 MML

let users lose on the system, and feedback changes required #591 2005 MMM
formal operating phase for four months after going live to support users #502 2005 HHH

Sharing of expertise (covers People Perspectives)

share expertise and skills #481 2005 MML
develop mutual ways of working #3 2005 HMM

Involving end-users (covers People Perspectives)

involve users in development process #502 2005 HHH
understand user needs #661 2005 MMM, £80 1996 MMM
involve users, e.g. in developing the file plan / classification scheme etc. #591 2005 MMM, #588 2003 MMH, #1025 2003 HMH
end-users are not to be treated as a homogenous group #163 2006 HMM

Training and support for users (covers People Perspective)

awareness raising, training, user support £1366 2007 HMM, £1368 2007 HML, #163 2006 HMM, #480 2005 MML+ #592 2006 MMM, #502 2005 HHH, #591 2005 MMM, #662 2005 HMM, #*755 2005 HMH, £#768 2005 HML, £587 2003 MMM, #580 2001 MMM, #313 1997 MMM, £80 1996 MMM
train on processes not just the software £872 2006 MMM
induction training for new staff #580 2001 MMM
on-going, one-to-one training for CEO and PA #502 2005 HHH
timing, level and provider (vendor and in-house) of 'floorwalking' #502 2005 HHH
simple instruction guides £80 1996 MMM

Policies and guidelines (covers Processes Perspectives)

policies of changing expectations £872 2006 MMM
create and test guidelines and policies #588 2003 MMH
compulsory use of system; sticks more effective than carrots #662 2005 HMM
guides #662 2005 HMM

Specific requirements (covers People, Processes and Technology Perspectives)

system that can handle paper and e-records in parallel #480 2005 MML
capturing scanned documents centrally #732 2005 MMM

One central/local government project established success criteria for their implementation projects to achieve #3 2005 HMM:

- more efficient and effective work processes;
- better management information;
- up to date technological infrastructure;
- openness and transparency
- more attractive workplace and supported knowledge sharing
- driver for change

1.2. Critical success factors for the implementation of other types of technology

Implementation projects are not just IT projects (covers People, Processes, and Technology Perspectives)

be aware of organisational politics £216 2001 HMM

consider organisational politics and professional loyalties as well as technical aspects
*625 2001 MHH

Commitment and support of CEOs (covers People Perspectives)

endorsement at highest level *239 2005 HMM, #473 1996 MMM
commitment *1346 2007 HHL
sponsorship £701 2001 HMM
executive staff to drive the implementation £407 2001 MML

Project aligned with business objectives (covers Processes Perspectives)

self knowledge £436 2004 HMM, £216 2001 HMM,
understand how business units operate #748 2005 HMM
understand role the technology plays in the business £436 2004 HMM

Good system design (covers People, Processes and Technology Perspectives)

Make interface similar to manual processing £828 2007 LML
Streamline process to minimise routine actions for staff £828 2007 LML
ease of use *625 2001 MHH

Demonstrate benefits (covers People and Processes Perspectives)

demonstrate/communicate the benefits for both the organisation and users *239
2005 HMM, #480 2005 MML, #591 2005 MMM, #588 2003 MMH
sell benefits to staff - time saved, value added, loss of routine/frustrating tasks £828
2007 LML
staff's job more interesting and challenging #1092 1998 HMM
for users, personal benefits are more of a driver than organisational benefits *625
2001 MHH
benefits that are strong drivers: ease of use, usefulness, improvement service,
simplify work *625 2001 MHH
benefits that are weaker drivers: admin issues, legal issues *625 2001 MHH
small change/system implementation paving way for later ERMS #748 2005 HMM

Integrated systems and technology (covers Technology Perspectives)

integrated systems #107 2004 MHH
integration with current/legacy technologies £216 2001 HMM
interfacing with other systems #1092 1998 HMM

*Involvement at all levels within the organisation and with external stakeholders
(covers People Perspectives)*

project management team comprising all stakeholders / functional areas #449 2002
MHM, £701 2001 HMM
strong, supportive leadership group of key users £407 2001 MML
local workgroups to design local best practice #473 1996 MMM
co-operation of business staff #748 2005 HMM
representation of business end users £701 2001 HMM
close relationship with customers £828 2007 LML
openness of the partnering culture #*273 2006 HHL
collaborative culture #*273 2006 HHL, £414 2003 MMM
involve systems owners for cross functional systems £701 2001 HMM

Communication (covers People Perspectives)

include technical experts in meetings £828 2007 LML
hold regular meetings £828 2007 LML

ask questions of customers £828 2007 LML
contact vendor directly with queries/problems £828 2007 LML
provide feedback £828 2007 LML

Change management (covers People Perspectives)

calm fears / reduce perceived threat *133 1998 MHM, £828 2007 LML
communicate benefits and pitfalls before the change £828 2007 LML

Planning and project management (covers People and Processes Perspectives)

strategy for producing a strategy £216 2001 HMM
strategy and tactics £216 2001 HMM
project management methodology £414 2003 MMM
planning - all resources and aspects and pre, during and post implementation #1092 1998 HMM
project team £216 2001 HMM, #473 1996 MMM
project management team comprising all stakeholders #449 2002 MHM
records managers to oversee the development #107 2004 MHH
keep it simple #473 1996 MMM
small incremental steps #1001 2004 MML
metrics to measure impact and success £216 2001 HMM

Prior existence/development of necessary 'infrastructures' (covers Processes and Technology Perspectives)

infrastructure development - IT, RM £216 2001 HMM
policies, principles, RM procedures #107 2004 MHH, #473 1996 MMM
audit of existing RM practices and recommendations for required changes #473 1996 MMM
linking RM change to the technology implementation #473 1996 MMM
knowledge management £414 2003 MMM

Piloting and testing (covers People, Processes and Technology Perspectives)

pilots or bench tests £216 2001 HMM

Technical support (covers Technology Perspectives)

quick response £#1115 2007 HMM
on site staff #1092 1998 HMM

Sharing of expertise (covers People Perspectives)

feeding back experiences of early adopters #473 1996 MMM

Involving end-users (covers People Perspectives)

end users involvement in the process *58 2005 HHM
involvement of business end users £701 2001 HM
group of end users involved in customisation £#407 2001 MML
user acceptance *58 2005 HHM
user confidence in technology *58 2005 HHM
adoption of positive attitude in workplace *58 2005 HHM
establishing rapport with users #748 2005 HHM
close relationship with customers; ask them questions £828 2007 LML
staff ownership £828 2007 LML

Training and support for users (covers People Perspectives)

training *239 2005 HHM, #107 2004 MHH, *#1177 2003 HHH, £216 2001 HMM, *362 2001 HHL, £#407 2001 MML
advice and support £216 2001 HMM, #473 1996 MMM
adequate skills and proficiency *58 2005 HHM
computer skills £828 2007 LML
show fit with organisational mission, strategy goals £828 2007

Policies and guidelines (covers Processes Perspectives)

policies and guidelines; easy to use and access *239 2005 HHM
tie compliance into processes *239 2005 HHM
monitoring, audit *239 2005 HHM
penalties for non-compliance *239 2005 HHM

Specific requirements (covers People, Processes and Technology Perspectives)

specific actions relevant to email management £586 2003 MMH
specific actions related to data cleansing £793 2004 MLM
specific actions related to international drug trials *362 2001 HHL

1.3. Critical success factors for the implementation of ERM at organisational or national levels

Implementation projects are not just IT projects (covers People, Processes, and Technology Perspectives)

simultaneously deal with people, process and technology £765 2004 HLL

Commitment and support of CEOs (covers People Perspective)

strong support from government £929 2005 MMM, #333 2000 HML
strong support from CEO £765 2004 HLL, #1013 2003 HMH, #333 2000 HML, *702 2000 HHL
management support £952 2005 HMM, #1013 2003 HMH
financial resources / funding arrangements £929 2005 MMM, *702 2000 HHL

Project aligned with business objectives (covers Processes Perspectives)

integrate RM into enterprise activities £765 2004 HLL
detailed analysis of business and functional requirements for recordkeeping #541 2001 HMM
business drivers (offensive e.g. improved service and defensive e.g. compliance) £952 2005 HMM
FoI as a driver #220 2000 HML

Project has clear agenda (covers Processes Perspectives)

cost-benefits £765 2004 HLL
risks £765 2004 HLL
identify needs £929 2005 MMM
look at requirements £952 2005 HMM
make collective decisions before specifying IT needs #717 1999 HMM
identify priorities £929 2005 MMM
develop strategic focus beyond e-documents £952 2005 HMM

Good system design (covers People, Processes and Technology Perspectives)

powerful technology and electronic tools #333 2000 HML
use standards #541 2001 HMM

manage both hard copy and digital #541 2001 HMM
embed policy positions in application business rules #541 2001 HMM
capture metadata in transparent way £765 2004 HLL
flexibility £765 2004 HLL
deletion of spam/junk £765 2004 HLL
application programming interface #541 2001 HMM

Demonstrate benefits (covers People and Processes Perspectives)

managers see the benefits #333 2000 HML
focus on user benefits £952 2005 HMM
market benefits to users #541 2001 HMM

Procurement planned and requirement-driven (covers Processes Perspectives)

use of commercial products #541 2001 HMM

Integrated systems and technology (covers Technology Perspectives)

integrated software (RM and office) £765 2004 HLL
legacy systems and databases #541 2001 HMM

Involvement at all levels within the organisation and with external stakeholders (covers People Perspectives)

involve donor agencies and private sector £929 2005 MMM
partnerships and collaboration at national, regional and international levels #541 2001 HMM, £929 2005 MMM
consultation with directors #526 2003 MML
committees / team of people with different competencies from across the organisation £238 2005 HMM, #333 2000 HML
look at practices, ideas and fears from all functional areas £952 2005 HMM
contact people in each 'section' #526 2003 MML

Change management (covers People Perspectives)

change management #541 2001 HMM
focus on user adoption £952 2005 HMM
user buy-in and acceptance £952 2005 HMM, £765 2004 HLL
marketing #541 2001 HMM
early involvement of managers and staff enables support #526 2003 MML
demonstrate that users' ideas and fears have been heard £952 2005 HMM

Planning and project management (People and Processes Perspectives)

team containing all the necessary skills, e.g. RM, IM, systems analysis *621 1998 HHH
staged approach; add in some control at departmental level £952 2005 HMM

Prior existence/development of necessary 'infrastructures' (covers Processes and Technology Perspectives)

functional approach #526 2003 MML, #541 2001 HMM
project-based approach rather than shared drive #526 2003 MML
detailed analysis of business and functional requirements for recordkeeping #541 2001 HMM
RM infrastructure #541 2001 HMM
RM development as preparation for implementation of an EDRM #526 2003 MML
RM culture *702 2000 HHL
qualified RM staff, with clear defined professional career path *702 2000 HHL

citation of warrant increased acceptance of functional requirements *464 1997 MHL
develop a taxonomy £952 2005 HMM
BPR #717 1999 HMM

Technical support (covers Technology Perspectives)
availability of hardware /software *702 2000 HHL

Involving end-users (covers People Perspectives)
user input/involvement at the beginning £952 2005 HMM, #526 2003 MML
users develop file plan #1013 2003 HMM

Training and support for users (covers People Perspective)
training users £929 2005 MMM, #541 2001 HMM, #333 2000 HML, *702 2000 HHL
ongoing training #333 2000 HML
training RM staff *702 2000 HHL
increased skills set for archivist *621 1998 HHH
IT knowledge and skills for LIS staff £74 1999 HMM

Policies and guidelines (covers Processes Perspectives)
policy framework; include cultural, environmental, social and economic factors £929
2005 MMM
IT policy to cover IS *702 2000 HHL
clear governance and accountability structures £929 2005 MMM
create baseline expectations for document management practices £952 2005 HMM
policy and process framework available online #541 2001 HMM
quick updating of policies and procedures #541 2001 HMM

Specific requirements (covers People, Processes and Technology Perspectives)
for information professionals to engage with e-business / e-government £404 2001
HMM
for university archivists £*782 2001 HML
for LIS staff £74 1999 HMM

2. SUMMARIES OF INDIVIDUAL ARTICLES

organised in ID number order

#3 2005 HMM

FESD project to look at implementation of an EDMS for Danish central and local government. CSFs were:

- co-operation
- developing mutual ways of working
- publishing practical guides on how to deal with the stages of the project
- visions
- time to achieve these visions

Organisations established success criteria for their implementation projects to achieve:

- "efficiency - efficiency and more effective work processes;
- management - better management information;
- technology - that the project contributes to an up to date infrastructure;
- openness - that the project constitutes a digital ground for openness and transparency in administration for citizens;
- employees - that the project provides a more attractive workplace where knowledge sharing is supported by technology; and
- change - that the project is a driver for change and rethinking within the organisation." (p.373)

Steinmark, C. (2005) 'EDM in the Danish public sector: the FESD project', *Aslib Proceedings*, 57 (4), pp.369-377.

*58 2005 HHM

The application service provider (ASP) model of distributing software over the Internet has demonstrable advantages over traditional means of IT deployment, but uptake has been slow. Article focuses on understanding user acceptance issue in the context of electronic medical records. **CSFs:**

- empirical evidence shows greater success in technology adoptions where end users involved in process
- long-term success dependent on user acceptance.

Three **factors critical** in relation to computer use:

- user confidence
- adoption of positive attitude in workplace
- adequate skills and proficiency.

Liu, L. & Ma, Q. (2005) 'The role of Internet self-efficacy in the acceptance of Web-based electronic medical records', *Journal of Organizational and End User Computing*, 17 (1), pp.38-57.

£74 1999 HMM

Skill requirements of LIS professionals in the new e-world. **CSFs:**

- LIS staff require both knowledge and skills in IT, and the will to put them to use. All three must be present.

Sridhar, M. S. (1999) 'Skill requirements of LIS professionals in the new e-world', *Library Science with a Slant to Documentation and Information Studies*, 36 (3), pp. 141-149.

£80 1996 MMM

Staff issues on EDMS implementation. **CSFs:**

- understanding needs and talking with users
- don't go paperless if some things are done better with paper
- use a pilot and let users try it out
- training - show users how to do the tasks and what the benefits will be; simple instruction card rather than huge procedure manual; user support when start implementation
- monitor for problems with selected users; proactive approach to solving problems and responding to feedback.

Duffin, K. (1996) 'Culture shock!! 'Lesson' the blow', *Information Management and Technology*, 29 (5), pp. 196-198.

#107 (Norris, 2004) MHH

Pilot study of email management at Loughborough University. **Recommendations** include:

- "That the HE sector recognise that e-mail records are institutional records that should be managed within an integrated records management system
- That records managers should be appointed in each institution to oversee the development of such approaches
- That appropriate e-mail policies, retention schedules and compulsory training regimes should be developed where necessary
- That a single e-mail client should be in use across each institution, ideally within an integrated electronic records management system with a workable archive." (p.28)

Norris, M. (2004) 'Records management and email: results of a pilot study examining the management of email at a UK university', *Records Management Bulletin*, (118), pp.25-28, 42.

***133 1998 MHM**

Ethnographic study of use of Lotus NOTES in a small semi-autonomous section of an organisation. **CSFs**:

- "only if the perceived threat posed by the information system were reduced in some way would user innovations in work practices and greater sharing of information within the organization become possible."

Beynon-Davies, P. & Lloyd-Williams, M. (1998) 'Health information systems, 'safety' and organizational learning', *Health Informatics Journal*, 4 (3 and 4), pp. 128-137.

#163 2006 HHM

Challenges of introducing e-collaboration into project-based industries such as construction, where multi-participant temporary projects are the norm. Use of EDMS to facilitate such e-collaboration. Based on a number of case studies in Scandinavia. These and other studies reveal:

- end-users not to be treated as homogenous group but differentiated by attitude and IT skills
- high level of satisfaction with system but much lower satisfaction with user support and training
- equal emphasis needs to be placed on technology, processes and people.

Bjork, B-C. (2006) 'Electronic document management in temporary project organisations: Construction industry experiences', *Online Information Review*, 30 (6), pp.644-655.

£216 2001 HMM

Technologies and business models for clinical data management. 1980s to 2010s.

CSFs:

- To cope with these choices develop a strategy for producing a strategy: a process of selecting and implementing choices; evaluation of your needs; a process for decision making; a process for institutionalising an interactive evaluation and steering of your strategy; budgeting for the software as an ongoing annual expense. ROI (return on investment) is difficult to calculate as the costs of many of the above factors and of the organisation's processes is unknown or would take a lot of effort to obtain.
- Also need to design and implement tactics: Set up a group to be responsible for the task; Self- knowledge - what your processes really are, and the strengths and weaknesses of your personnel; organisational politics - p.718 "identifying and aligning executive motivations and expectations, and gaining cross-functional co-operation."; valid, reliable and easy to obtain metrics to measure the impact of the technology and its success; infrastructure development - hardware, data security and privacy, regulatory compliance, user support and training etc.; well designed and run pilot studies or bench tests; integration of system with older or parallel technologies.

Waife, R. S. (2001) 'Transitioning clinical data management from the 1980s to the 2010s: strategies for corporate decision making', *Drug Information Journal*, 35 (3), pp. 713-719.

#220 2000 HML

Finland's Defence Forces have set up an ERM project p151 "to introduce a totally new paradigm of information and records management." New project will set up a joint registry. **CSFs:**

- Project only started because of driver of FoI and requirement to set up RM and a time limit by which this had to be done.

Kikki, J. (2000) 'A new model for electronic recordkeeping in the Finnish defence forces', *Records Management Journal*, 10 (3), pp. 150-160.

£238 2005 HMM

The 'Sedona Guidelines: Best Practice Guidelines and Commentary for Managing information and Records in the Electronic Age'. Guideline One: Adopt a Practical and Reasonable Approach. **CSF:**

- P.55 "committees formed with representatives of information technology, business units, records management, and legal, along with tax, audit, finance, human resources, and other functional groups ... The legal department should provide leadership and guidance in this effort with string management support."

Allman, T. Y. (2005) 'Fostering a compliance culture: the role of the Sedona Guidelines', *Information Management Journal*, 39 (2), pp. 54-56, 58, 61.

*239 2005 HHM

A questionnaire survey of corporate e-mail users in Singapore. **CSFs:**

Suggestions from respondents for improvement (organised under 4 stages of policy formulation process):

1. Beginning: clear, concise, easy to use, easily accessible policies and guidelines; tie email compliancy with daily work routine; penalties e.g. limit mailbox storage size; proper email management systems
2. Dissemination: emphasis from top managers; training; highlight benefits of compliance

3. Monitoring: periodic reminders, audits and checks
 4. Discipline: warn / punish non-compliers (e.g. terminate email account).
- Chennupati, K. R., Foo, S. & Seow, B. B. (2005) 'Management of e-mails as official records in Singapore: a case study', *Records Management Journal*, 15 (1), pp. 43-57.

#250 2004 HMM

An expert opinions, which also includes two case scenarios (one in local government, one in financial services) discussing implementation of supporting technologies and services for information and record management. **CSF:**

- EDRM projects "were compelling to executive management because in both instances the projects were aligned with enterprise planning imperatives" p. 13

Asprey, L. (2004) 'Information strategies: are we aligning the business case with enterprise planning?', *Records Management Journal*, 14 (1), pp.7-13.

#*273 2006 HHL

Looked at 3 construction projects in UK - New road surface, PFI hospital, insurance company office refurbishment - and their use of a specific information management system (IMS) Sysdox, a Lotus Notes IT-based application.

RESULTS FOR ROAD PROJECT. Involved a collaborative partnership of four main contractors. Sysdox provided for access to the IMS for all partners. **CSF:**

- the openness of the partnering culture.

RESULTS FOR INSURANCE COMPANY. Involved construction management procurement route and involvement of partners. **CSF:**

- The collaborative culture was essential to the overall success of the project.

Craig, N. & Sommerville, J. (2006) 'Information management systems on construction projects: case reviews', *Records Management Journal*, 16 (3), pp. 131-148.

#313 1997 MMM

Implementation of imaging technology for recordkeeping at the World Bank. P.25 "evolution of an electronic document management system that includes record-keeping components and how the Pittsburgh requirements were used to evaluate it at one crucial point in its development." Architecture of 3 tiers: Tier 1 - an individual's working or reference copies so not records; Tier 2 - collaborative documents, records, but may not need preserving; Tier 3 - documents in final form so records that need preserving. Have a bank-wide network - the Enterprise Network which solves the problem of bank-wide sharing and delivery and standardisation of applications and platforms. Standard office tools sort out Tier 1. Imaging technology will help with Tier 3. Newer collaborative/work group tools should enable Tier 2. For document imaging adopted Electronic Filing System (EFS) from Excalibur Technologies. **CSFs:**

- Used the file plan developed for paper records with only minor modifications. P.27 "This was an important factor in gaining user acceptance - the user were presented with a familiar environment."
- P.28 "The Pittsburgh study recommended four tactics for meeting requirements: policies, design, implementation and standards. The bank concluded that all are necessary and also placed a high degree of stress on training."

Smith, C. D. (1997) 'Implementation of imaging technology for recordkeeping at the World Bank', *Bulletin of the American Society for Information Science*, 23 (5), pp. 25-29.

#326 2004 HMM

Swedish International Development Cooperation Agency (Sida). Process of transition from paper to electronic based administration. **CSF:**

- "essential ... that an IT project of this magnitude should never be a technical project. It is primarily an operational project." (p 27)

Alariksson, S., Axelsson, S. & Granath, P. (2004) 'Creating a system for public information: the Swedish aid agency's transformation to electronic administration', *Records Management Journal*, 14 (1), pp.25-32.

#333 200 HML

The development of RM at the French National Library. Driven by new President and a new CEO taking up post. **CSFs:**

- Strong support from President and CEO. "This position in the organisational hierarchy means the author is free to intervene at any level necessary, without a long and hard process of seeking support from authority."
- Training. P. 101 "Training has been essential and is a significant investment which must continue and become a permanent feature."
- Informal team of people with different competencies from across the organisation.
- Managers see the benefits.
- Powerful technology and electronic tools.

Dherent, C. (2006) 'Document management at the French National Library', *Records Management Journal*, 16 (2), pp. 97-101.

#352 2001 MMM

Greenwich Millennium Village (GMV) development; new riverside development in London. Use of an EDMS - an internet based document management and workflow solution. **CSF:**

- Commitment and support of GMV directors.

Fowler, D.S.G. (2001) 'Greenwich Millennium Village Web enabled electronic data management system', *Records Management Bulletin*, (103), pp.21-22,24.

*362 2001 HHL

Study looked at Web-based tools in two international multi-center gastrointestinal drug trials. Developed a set of Web-based tools for data entry, data checking, data query, serious adverse event reporting, handling of laboratory values, and study management information - COOL (Clinical Operations Online). **CSFs:**

- In an international study use local resources, e.g. ISPs, on a decentralised basis.
- Training and experience with system.

Dimenas, E., Johansson, D., Palmblad, M. & Wrangstadh, M. (2001) 'Clinical Operations Online (COOL): a World Wide Web-based approach to running clinical trials: results from two international multicenter gastrointestinal trials', *Drug Information Journal*, 35 (3), pp. 745-753.

£404 2001 HHM

E-business and e-government and information management. Where should the information professionals engage with / influence this new situation? **CSFs:**

1. Where information policy is made.
2. Where information systems are designed.

3. Where record meets information. P.20 "show the connection between records issues and the information initiative that the agency or office is undertaking."
4. Where customer meets institution. Transactions, customer information for competitive advantage, customer access to organisation-generated information etc.
5. Where the institution has its public face. RM and archiving of Web sites.
6. Where law and information intersect. RIM should be a partner of the organisation's legal office.

Dearstyne, B. W. (2001) 'E-business, e-government, and information proficiency', *Information Management Journal*, 35 (4), pp. 16-20, 22, 24.

£#407 2001 MML

E-medical records systems. **CSFs:**

- "Keys to success included a strong, supportive physician leadership group and a strong executive staff to push things along" [p5]
- When planning implementation, NYU Medical Center—which already used Eclipsys—was used as model.
- One year and 3 full-time medical staff spent customizing system.
- Thorough training for physicians, available at any time during the week.

Zablocki, E. (2001) 'On the road to computerization. Establishing an Internet-based electronic medical records system', *Medicine on the Net*, 7 (11), pp. 1-7.

£414 2003 MMM

New product introduction. **CSFs:**

- "Successful organisations are focussing on programme and project management as a discipline or department. The focus is moving to task/goal-oriented techniques, and the use of collaboration rather than critical path. [p157]"
- Discusses programme/portfolio management (using an established methodology such as PRINCE2), knowledge management & collaboration as the key business enablers.

Griffiths, A. (2003) 'Programme and portfolio management: the new competitive edge in product development and change management', *Information Management and Technology*, 36 (4), pp. 156-160.

£436 2004 HMM

The legal aspect of managing e-communications. **CSFs:**

- An organization needs both to be self-aware and to understand the role that messaging plays in its business.

Montana, J. C. (2004) 'E-mail, voice mail, and instant messaging: a legal perspective', *Information Management Journal*, 38 (1), pp. 37-38, 40-41.

#449 2002 MHM

Designing an email records repository for the State of Texas using the Open archival Information System (OPASIS) Reference Model. **CSFs:**

- Repository Management Team p. 5 "careful consideration of the membership of this team and the members' roles is vital ... requires an active management team composed of all stakeholders, who, acting together, can facilitate the cross-agency cooperation necessary for the success of the central repository."

Green, M., Soy, S., Gunn, S. & Galloway, P. (2002) 'Coming to TERM: designing the Texas Email Repository Model', *D-Lib Magazine*, 8 (9), p. No page numbers.

***464 1997 MHL**

Functional requirements (FRs) for recordkeeping. The Pittsburgh project took the view that the network of laws, standards, practice, and so on could add weight to the case for functional requirements by providing a warrant for organizational compliance with the FRs. As part of the project, a compendium of laws etc was compiled, initially concentrating on legal, auditing, and IT sources as practitioners in these areas have power within organizations. **CSF:**

- Subsequent study found that citation of warrant had a significant impact on acceptance of FRs in ERKS, particularly where it was located in legal requirements. If properly researched, warrant could therefore be helpful in getting a higher priority recordkeeping system functionality

Duff, W. M. (1997) 'Compiling warrant in support of the functional requirements for recordkeeping', *Bulletin of the American Society for Information Science*, 23 (5), pp. 12-13.

#473 1996 MMM

Managing the change to ERM in the DTI within the context of the introduction of an office automation programme. **CSFs:**

- Policy and principles recommendations endorsed at highest level
- Implementation - team to manage the change.
- Audit of existing RM practices and recommendations for change required.
- Setting up local workgroups to design local best practice for document management, using template of key questions to address.
- Keep it simple.
- Advice from RM staff and change team available.
- Feeding back experiences of early adopters to later ones.
- Linking RM change to the implementation of new office software.

Wood, S. & MacLachlan, L. (1996) 'Managing the change to electronic records management in the DTI', *Records Management Bulletin*, (73), pp.3-6.

#480 2005 MML

(See also #592 2006 MMM)

Setting up an EDRMS within the UK Department of Constitutional Affairs (DCA).

CSFs:

- Long pilot
- "The DCA believed that people would not only have to change the way they worked but also be convinced that it was a change for the better." (p 37)
- Ease of integration of system with Microsoft Office.
- Structured approach to implementation
- Education and training, with awareness raising, in-house training and on-site support.
- Handles paper records (in existing registries) and e-records in parallel.

'Department of Constitutional Affairs succeeds with EDRM project on time and on budget' (2005), *Records Management Bulletin*, (125), pp.37-38.

#481 2005 MML

Gloucester County Council, RM practice 2000 to 2005 - move from paper to EDRM.

CSFs:

- "Importance of single responsibility and driving agenda coupled with corporate authority and shared ownership, skills and knowledge

- Main drivers for change were Fol and IT imperatives around e-mail and ESCR [electronic social care record]
- With hindsight, opportunistic approach to EDRM had positive and negative consequences
- Importance of sharing expertise and skills with others; liaison group with districts, police, health authorities and colleges". (p 121)

Kingsley, N. (2005) 'The Gloucestershire experience of good records management practice: a personal lection 2000-2005', *Information Management and Technology*, 38 (3), pp.112-113,121.

#502 2005 HHH

Full-scale overhaul of recordkeeping procedures at PRONI (Public Record Office of Northern Ireland) culminating in implementation of EDRMS (final choice was Tower Software's TRIM Context), working to ISO 15489 as standard. PRONI started on one of three lead EDRM implementation projects in Northern Ireland Civil Service (NICS) in summer 2003, the first phase of a NICS-wide implementation. **CSFs:**

- Preparation and laying of foundations
- Adoption of project management approach. Project methodology: PRINCE II.
- Benefits realization stage integral to project; revealed organizational commitment to building on implementation and realizing benefits
- RM and IT input recognized as critical from the outset. RM input rapidly led to full-time assignment of one team member to RM issues, with IT called on as needed. Continuing management and roles discussed during implementation, with need for continued RM and administrative input recognized as essential, with IT staff happy to take background support role. Identified continuing responsibility as lying with PRONI's RM unit.
- RM skills essential in regaining corporate control of records. Re-introducing good RM procedures. Functional classification scheme "the single most critical component of an EDRM project" [p144].
- Time commitment from senior managers and from business sections should have been indicated in business plans to clarify resource implications.
- Change management. To help project team and put in place mechanism to aid cultural change, representatives (power users) sought from each work section: these were consulted, updated and trained throughout project. Best way to achieve necessary staff familiarity with Business Classification Scheme and acceptance of cultural change is to involve them in development process and allow time for change to take root. Focus groups held with staff from each area after basic course.
- Communication was instituted – updates to senior managers, articles in internal magazines, competitions, awareness sessions, updates to intranet. Also liaising with other lead projects and giving presentations / workshops.
- Imposition of deadlines helped focus attention of staff.
- Training. Chief Exec and PA need ongoing one-to-one training on searching and overall use of corporate file-plan. System went live, with software installed on PCs while staff were on training course, "an essential lesson we had learnt from other implementations" [p147]. Timing and level of 'floorwalking' done by external provider, delaying it until users had assimilated enough of the new system to be able to avail of this support: initially, floorwalking done by project team – time-consuming, but enabled highlighting of issues and rapid response.

- Formal operating phase of project for four months after going live, allowing project team to provide continuing support and contribute to NICS-wide implementation phase.

Smyth, Z. A. (2005) 'Implementing EDRM: has it provided the benefits expected?', *Records Management Journal*, 15 (3), pp. 141-149.

#504 2006 MMM

A 'virtual' (i.e. unnamed) local Council case study. **CSF:**

- the necessary IT infrastructure and good working practices were already in place to enable the solution (a document/workflow management system) to work effectively.

Phillips, J. (2006) 'Long-term benefits at low cost: a virtual case study for the public sector', *Information Management and Technology*, 39 (1), pp.39-41.

*510 2005 HHM

The use of IM modelling and methodologies in EDMS design to overcome shortcomings of technology-driven approaches. **CSF:**

- DM is critical to managing information, particularly unstructured information, which poses several problems related to: its characteristics; incompatibility between proprietary formats; heterogeneity of formats; and distribution of data sources. Effective EDMS needs to address all these.

Paganelli, F. & Pettenati, M. C. (2005) 'A model-driven method for the design and deployment of Web-based document management systems', *Journal of Digital Information*, 6 (3).

*524 2006 MHH

Qualitative results of questionnaire survey (for an MBA in technology management) on use of EDRM by English central government organisations in support of FoI.

CSFS:

- "For future cross-sector technology implementations, the Government should write to permanent secretaries and chief executive officers to make its expectations and any constraints explicit." (p 21)
- "Organisations should ensure that all technology implementations have sufficiently-experienced project managers." (p 21)
- "For all future cross-sector technology implementations, regulatory impact assessments should include a full consideration of the technology market place." (p.21)
- "Where similar time-bound exercises are required in future, OGC should be immediately tasked with establishing a specific procurement framework to increase choice of both product and system integration." (p.21)
- "Future cross-sector technology implementations should be staggered across organisations to mitigate against a run on the market." (p 21)
- "Organisations must ensure that strategic technology recommendations are authorised by their own senior management." (p 22)
- "For future exercises, the government must ensure that a single organisation has explicit responsibility for advising on technology acquisition and implementation." (p 22)
- "For large cross-sector implementations, lead organisations should maintain a register of designated project managers in order to facilitate better communication." (p 22)

- “Organisations must ensure that project teams and governance arrangements for future technology projects have adequate business-user involvement.” (p 22)

Greenaway, N. (2006) ‘EDRM: acquisition and implementation across central government’ *Records Management Bulletin*, (134), pp.19-22.

#526 2003 MML

Health and Safety Executive (HSE) in preparation for the required implementation of EDRM by 2004 target is working on its records plan to manage both paper and e-records. **CSFs:**

- P. 45 "The HSE has seen the need for an intellectual framework for organising information held in records." i.e. a functional approach. The records plan is seen as an enabler, in providing a common, organisation-wide framework for categorising information."
- The taxonomy, developed with a team of CILIP consultants, will be independent of any software package chosen.
- Adopted a project-based approach supported by functionally organised records system, rather than a shared drive, with each department owning a specific section of this drive.
- Mapping HSE's processes involved extensive consultation with directors and contact people within each directorate for more detailed consultations. P.45 "A large number of people were involved, at an early stage. Their enthusiastic endorsement of the approach being taken has ensured the support of managers and staff throughout the HSE."

Haynes, D. (2003) 'Managing records, function, cultural and technical change', *Library + Information Update*, 2 (8), pp. 44-45.

#541 2001 HMM

Victorian Electronic Records Strategy (VERS) implementation project at the Department of Infrastructure, Melbourne, Australia. **CSFs:**

- Not always appropriate to capture at point of creation, e.g. legacy database at point of decommission.
- Need to develop p. 77 "a basic records classification scheme that fits the functional outputs of the organisation."
- Change management. Marketing VERS, e.g. p. 78 "present the idea that if every individual spends a little time on each record, over time, the value and benefit of the record collection grows. Having an infrastructure in place in which it is simple to capture, store, manage and dispose of records will allow us to market this service capability to staff. It is difficult to ask people to capture electronic records if there is no way to effectively manage them."
- Training. P. 78 "With a very mobile work force the usefulness and impact of traditional approaches to awareness and training need to be questioned. The approach we are adopting is to embed as much of the policy positions in application business rules and to provide an online policy and process framework via the departmental intranet."
- Market VERS as a common approach to RM within the Victoria Government. Many presentations by VERS team. Set up a special interest group.
- PROV standard p. 78 "has been a significant advantage in ensuring that a single consistent approach to the format of digital records across government takes place."
- Quick updating of policies and procedures in a rapidly changing environment; online framework makes this easier.

- Need for detailed analysis of business and functional requirements for record keeping.
- Setting up of a records retention and disposal authority.
- Record keeping system needs to manage both hard copy and digital objects. Use of commercial products, e.g. TRIM (Tower Software) and Fulcrum/EIP (Hummingbird Corp).
- Need to set up application programming interface so actions can be carried automatically.
- Collaboration across Australia and with national archival organisations in US, UK, Canada so VERS team kept up to date.
- P.80/1 " A significant commitment needs to be made to implementing the infrastructural base and supporting this with training and other streams of education."

Quenault, H. (2001) 'VERS implementation project at the Department of Infrastructure: Melbourne, Australia', *Records Management Journal*, 11 (2), pp. 71-82.

#570 2004 MML

(See also #*755 2005 HMH)

Implementing an EDRMS at the British Library Estate Directorate. **CSFs:**

- Should have had a 'model office' prior to rollout so system set up could have been validated.
- More time on e-mail policy management to enhance user understanding.

'A tower of strength in the British Library Estates Directorate keeps everything neat and trim' (2004), *Information Management and Technology*, 37 (1), pp.19-20.

#580 2001 MMM

Discussion of EDM implementation. **CSFs:**

- RM training for staff during EDM adoption
- in-built into induction training for new staff.

Allison, D. (2001) 'The application of records management disciplines into electronic data management', *Records Management Bulletin*, (103), pp.9-11,13.

£586 2003 MMH

Discussion of email management. **CSFs:**

- "While maintaining only those documents that are relevant, organisations must manage e-mails as documents of records in order to meet legal and regulatory requirements. To do so, organisations must:
 1. Separate relevant e-mail records from non-relevant and personal mails.
 2. Store the relevant e-mails and their attachments as records in their original format.
 3. Store the e-mails outside of the e-mail system as records to prove they are authentic documents of record.
 4. Manage the lifecycle of e-mails within a Certified records management system." (p 8)

Datskovsky, G. & Moerdler, M. (2003) 'Solving the e-mail challenge: effectively managing e-mails as documents of record', *Records Management Bulletin*, (113), pp.5-9.

£587 2003 MMM

Discussion of electronic document and records management. **CSFs:**

- "address EDRM as a change management programme, and resource it accordingly; raise enterprise-wide awareness to the initiative, especially among senior management, and prepare training and education programmes; be aware of your specific IT needs when evaluating and procuring technology, and above all, remember that EDRM is more complicated than simply implementing new technology. (p 20)

Higgison, S. (2003) 'Electronic document and records management', *Records Management Bulletin*, (116), pp.17-20.

#588 2003 MMH

Implementation of an EDRMS at the Highways Agency: the lessons learnt. **CSFs:**
Creating a business case for EDRM

- "Group like benefits together, and use questionnaires and surveys to measure intangible ones.
- Ensure the EDRM project is included in corporate management and business plans." (p 11)

Senior buy-in and maintaining board awareness

- "To maintain visibility on the board, ensure a senior EDRM champion attends or is on the board.
- Involve SRO [senior responsible owner] and other senior management staff in monthly board and project steering meetings." (p 12)

Effective programme and project management

- "Treat EDRM as a change management project
- Spend time setting up the project office, tracking progress of tasks and drawing up the programme or project plan
- For larger implementations, a project office and administration support will be vital
- Set up controls for managing risk, benefits and resources." (p 12)

Resource management

- "Use internal staff in the project office who already understand existing procedures. Provide them with training, e.g. MS Project, so they update their skills and become even more productive
- External independent consultants can offer invaluable skills transfer, advice and guidance. They also help to maintain project progress." (p 12)

Communications

- "Communication is vital for an EDRM project. First, draw up the stakeholder list and ensure this is kept up to date.
- Identify and use a variety of communication channels, e.g. magazine publications, portals and e-mail broadcasts
- Test all communication first by setting up an EDRM communication group. Ensure members represent the organisation as broadly as possible." (p 13)

Change management

- "communicating benefits will be vital to bring about change. These include personal benefits for users, as well as corporate ones
- Senior EDRM management team members should be actively involved in managing individuals and groups identified in the stakeholder list." (p 13)

The corporate file plan

- "A functional-based file plan will require less long-term maintenance, but ensure business areas are consulted during development. This may mean that creating the plan will take longer than expected." (p 13)

Benefits management

- “Involve business areas in setting up benefits and managing their outcomes
- Given the long duration of benefits realisation, benefits would be more effectively managed by an internal team, e.g. information policy or audit” (p 14)

Creation of guidelines and policies

- “Guidelines and policies will form the backbone of the EDRM support service. By drawing up initial drafts and testing them, you will aid implementation as they will have been refined by then.” (p 14)

Procurement and evaluations

- “The OJEC [Official Journal of the European Community] procurement option provided a framework for procurement
- Use independent consultants to help draw up a list of requirements, and ensure that a section on business requirements is included.” (p 14)

Ladd, M. (2003) ‘Electronic document and records management: 10 lessons learned before implementation in the Highways Agency’, *Records Management Bulletin*, (117), pp.:11-14.

#591 2005 MMM

(See also #661 2005 MMM)

Implementing an ERMS at The Royal Parks Agency. **CSFs:**

- Project Board with good understanding of the issues and members with in depth knowledge of the organisation and its staff.
- Workshops with a wide selection of staff to develop the classification scheme.
- Training - staff split into three groups: administrators (responsible for IS and RM), super users (knowledgeable of organisation with good IT skills), standard users (low IT skills of many). Training also incorporated into review of system configuration, i.e. let loose on the system. Training involved coverage of benefits of the EDRMS to support change. Training collected feedback on the classification scheme.
- Small organisation, so lacked staff resources, but could react quickly and greater commitment to organisation.
- When using system, standard process for requesting a change to the classification scheme.
- Post training support - one to one, guides, customised training, cascading training to reduce dependency on consultants.

‘Records management for field based staff at the Royal Parks Agency’ (2005), *Records Management Bulletin*, (125), pp.33-35.

#592 2006 MMM

(See also #480 2005 MML)

Implementation of an ERMS at the Dept of Constitutional Affairs (DCA). **CSFs:**

- Selected system on the basis of an output-based specification, i.e. what the DCA wants from the software.
- Delivered in a phased approach to tranches of staff.
- Developed a functional business classification scheme for that tranche.
- Appoint information managers to support the ERMS in their area.
- Set up computer training suite and a computer-based training package. Followed up by floor walking and one to one sessions.

Lang, N. (2006) ‘e-RM at the Department for Constitutional Affairs (DCA)’, *Records Management Bulletin*, (132), pp.21-22.

#607 2000 HML

Rollout of an electronic records system at South Africa's National Electricity Regulator (NER). Selected Oculus software - an integrated record and management workflow solution. **CSFs:**

- P.85 "An enormous benefit at the NER is the commitment of top management to effective information and records management."

de Wet, S. D. & du Toit, A. (2000) 'The challenge of implementing a records management system at the National Electricity Regulator in South Africa', *Records Management Journal*, 10 (2), pp. 73-86.

*621 1998 HHH

Results from the Indiana University Electronic Records Project (IU) conducted by the Indiana University Archives and the University Information Technology Services 1995-7. This project implemented and tested the 'Functional Requirements for Evidence in Recordkeeping' developed at the University of Pittsburgh (Pitt). The IU offices covered in the project were the Financial Management Support and the University Enrolment Services. **CSFs:**

- Need a team to use this approach so can ensure have all the necessary skills available, comprising at least a professional archivist/records manager (RM skills), an IM administrator (systems and data management), and a system analyst (functional decomposition and systems analysis).
- Archival profession also needs to add to their skills toolkit: p.359 "a basic knowledge of how automated systems are created and work; a more detailed knowledge of information management methodology; experience with functional analysis methodology and modelling techniques; and knowledge of computer-based information systems, particularly metadata systems, such as data dictionaries and information resource dictionary systems."

Bantin, P. C. (1998) 'Developing a strategy for managing electronic records: the findings of the Indiana University Electronic Records Project', *American Archivist*, 61 (2), pp. 328-364.

*625 2001 MHH

A user acceptance questionnaire survey of e-medical records system in a New Zealand hospital context. **CSFs:**

- Use of system dependent on personal costs (time & money); would need to demonstrate benefits to staff and patients before the staff would use the system; less keen to use if only beneficiary were the organisation.
- Perceived ease of use and usefulness were both very important.
- System's ability to improve patient care and reduce or simplify respondents' work were more important than admin/legal benefits.
- Consider not only the technical characteristics of the system, but also organizational politics and professional loyalties.

Handy, J., Hunter, I. & Whiddett, R. (2001) 'User acceptance of inter-organizational electronic medical records', *Health Informatics Journal*, 7 (2), pp. 103-107.

#661 2005 MMM

(See also #591 2005 MMM)

Experiences of implementing an ERMS (TRIM; Audata) at the Royal Parks Agency where staff are mostly field based and not very computer orientated. **CSFs:**

- Park members on Project Board "had a firm understanding of what the project involved and were able to make decisions when they were required, which was imperative to keep the momentum going and the project on time." (p 25)

- Small organisation which can react quickly to changes in circumstances and has greater staff commitment.
- "putting into place the right team of suitably experienced and qualified people, careful planning, a quality assurance based implementation model and a thorough understanding of the needs of individuals within the organisation." (p 36)

Hipwell, G. & Johnston, G. (2005) 'Records management for field based staff at the Royal Parks Agency', *Records Management Bulletin*, (126), pp.25-26,36.

#662 2005 HMM

NHS Purchasing and Supply Agency implementing an ERMS. **CSFs:**

- P.85 "Although senior management buy-in is very desirable, it is possible, if you are determined and resolute, to implement an ERM system without it. The desired results can be achieved if senior management empowers the project team to produce the results but does not get personally involved."
- P.85 "the massive cultural shift needed to bring in an ERM system."
- P. 85 "the [project] team has to be highly motivated and support one another".
- Implementation plan, with progress checked off each month, and amended as required.
- Project group from all functions and specialisms, covering a range of grades and experience.
- Pilots. Must be compulsory use of system. Sticks more effective than carrots.
- Setting up access controls so users can only see what they are allowed to.
- Guides to using the system and good communication.
- Training and champions.

Gregory, K. (2005) 'Implementing an electronic records management system: a public sector case study', *Records Management Journal*, 15 (2), pp. 80-85.

#686 2002 HMM

UK Debt Management Office (UKDMO) - small organisation, few RM staff, mergers with other bodies. P.94 "an approach to managing electronic records by integrating the development and implementation of a corporate records management programme based on ISO 15489 ... with the implementation of an electronic records management (ERM) software package." Future aim is an EDRMS. **CSFs:**

- p.96 "Formally appointing 'champions' within each function is necessary for policing network folders once ERM software is implemented. Their role is in liaising with the records manager, monitoring usage of their function's network folders, negotiating the creation of new files (and folders) and most importantly, helping mentor staff and fostering a culture of (e-)filing within the function."
- P.97 "The model for managing electronic records detailed in this paper has come about through a need to maximise resources. The way in which it is being implemented within the UKDMO is phased across functions: when one function is entering in to full ERM, another is at the beginning of developing its file plan. Thus functions across the organisation are at differing stages in the process, allowing more detailed work such as developing file plans to be overseen by records management staff, whilst staff in functions 'e-tidy' with guidance from 'champions'. Whilst managing the workload for records staff, this model also allows end-users to see how the process works and to see the benefits being reaped by other functions."

Benfell, P. (2002) 'An integrated approach to managing electronic records', *Records Management Journal*, 12 (3), pp. 94-97.

£701 2001 HMM

Main focus of the extensive recent literature on FDA's Electronic Records/Electronic Signatures Rule 21 CFR 11 (Part 11) has been on laboratory and manufacturing rather than clinical practice. Emphasis therefore on more automated instrumentation-oriented environment of former than of more traditional IT environment (databases, mainframes, PCs, etc) of latter. Former is "equipment-intensive", latter "heavily data-oriented" and interactions and effects within systems are complex and not always obvious. [p721]. Article will explore challenges relevant to systems used in clinical research as opposed to lab/manufacturing. **CSFs:**

- Identifying systems owners for cross-functional systems - not always easy to determine system owner.
- "It cannot be stated enough that representation and involvement from the business end users are critical in a successful implementation of a validated system" [p728].
- Part 11 compliance not the sole responsibility of IT/IM.
- High-level management sponsor.
- Cross-functional project team.

Olson, L. (2001) 'Electronic record challenges for clinical systems', *Drug Information Journal*, 35 (3), pp. 721-730.

*702 2000 HHL

The study sought to determine the key issues that underpin the management of administrative and personnel records in electronic form at Moi University, Kenya. Main target population: registry clerks and senior administrative officers (SAOs) involved in management of admin / personnel records. Lecturers from departments of Archives and Records Management (ARM) and Information and Media Technology (IMT) in the Faculty of Information Sciences (FIS) interviewed as informants. Personal interviews with lecturers / SAOs, questionnaires for clerks. Asked to consider CSFs. **CSFs:**

SAOs:

- availability of hardware / software
- high commitment from senior management
- embracing of RM culture by University
- financial resources
- training and re-training of records staff and users

Lecturers:

- financial support and training;
- need to recruit formally qualified RM staff
- need for up-to-date hardware / software
- IT policy to cover IS management and maintenance
- need to raise profile of RM and records managers by recruiting professional records / archives staff
- need for clearly defined professional career path.

Kemoni, H. & Wamukoya, J. (2000) 'Preparing for the management of electronic records at Moi University, Kenya: a case study', *African Journal of Library, Archives and Information Science*, 10 (2), pp. 125-138.

#717 1999 HMM

(See also #1025 2003 HMM)

U. S. federal electronic records management. Using business process reengineering (BPR) as a means of implementing ERM. The Environmental Protection Agency (EPA) case: workflow and ERM. **CSFs:**

- Once collective decisions had been made, specifying IT needs was straightforward.
- Generalizable conclusion is that “any agency planning to undertake an ERM implementation must as a practical necessity include in its planning a BPR for its associated work processes” [p41]

Van Wingen, R. S., Hathorn, F. & Sprehe, J. T. (1999) 'Principles for information technology investment in U. S. federal electronic records management', *Journal of Government Information*, 26 (1), pp. 33-42.

#732 2005 MMM

EDRM implementation at the Competition Commission. **CSFs:**

- Use of a consultant.
- Model office followed by a pilot.
- Strong framework for the direction of the project.
- Breaking the project, and therefore the change, into manageable pieces.
- New fileplan, adopted across the organisation before the EDRM rollout and used in shared drives and directories.
- Fileplan grouped at lower levels by areas of expertise. So administrators in these areas can take over IT functions such as correcting errors and giving users access permissions.
- Capturing scanned documents is done centrally.
- Need for a high level sponsor, achieved by piloting the EDRM in the Chief Executives Office and all members are taking part.
- "EDRM is more about leading and managing change than any specific technology, and leadership comes from the top." (p 43)

Kibby, P. (2005) 'The Competition Commission's story: a case study in EDRM delivery', *Records Management Bulletin*, (125), pp.41-43.

#748 2005 HMM

Real-life examples from the US government sector focused on low-cost, low-tech solutions rather than big-budget ERMS implementations. **CSFs:**

- co-operation of business staff necessary to successful implementation
- starting with small changes or implementation projects stands a better chance of success than major enterprise-wide efforts.

Case 1: Digitizing bank examiner work papers. Records manager in federal banking agency needed to convert manual records system into ERM system. Looked for a unit that was already doing its business electronically, and found that bank examination staff were using software package developed with other bank regulators to create and store papers related to examination work. Records manager asked IT to develop small bit of code so that whenever a set of papers was saved by an examiner, a copy would automatically go to a folder controlled and accessible only by the records manager. **CSF:**

- “By undertaking a small, low-budget project, the records manager was able to demonstrate that the ERM system was workable and to make a more informed recommendation for an enterprise-wide system” [p59].

Case 2: Implementing ERM in a small federal agency. Working collaboratively to build effective processes. RM team did not impose, but reached solutions through collaboration. **CSF:**

- "Understanding how the business units operated and establishing rapport were vital factors in the success of the records management program" [p59].

Case 3: Presenting the case to management. Using full functionality of existing technology to improve ERM processes and build capacity. Law librarian of federal agency legal division undertook project that, while not itself an ERM project, paved the way for later ERM implementation.

Young, J. (2005) 'Electronic records management on a shoestring: three case studies', *Information Management Journal*, 39 (1), pp. 58-60.

#*755 2005 HMH

(See also #570 2004 MML)

Implementing an ERMS at the Estates Dept, British Library. TRIM Captura. Also procured a thesaurus. p. 154 "two years into the running of the system, it was obvious that only a small core of about 20 users (of a potential 60) were using the system on anything approaching a regular basis." Survey of staff carried out. **CSFs:**

- p.156 "Choose a user-friendly system that is as simple as possible to use."
- "Don't bother with a thesaurus."
- "Focus on good records management behaviour first."
- "You can't do enough training."

Maguire, R. (2005) 'Lessons learned from implementing an electronic records management system', *Records Management Journal*, 15 (3), pp. 150-157.

£765 2004 HLL

Interviews with three chief information officers on ERM: CIO1 = School + Storage Networking Industry Association; CIO2 = Law firm; CIO3 = National Archives and Records Administration (NARA). **CSFs:**

CIO1:

- leadership buy-in
- articulating cost-benefits and risks
- capture metadata in transparent way
- flexible for individual organisation's needs.

CIO2:

- deletion of spam/junk etc.

CIO3:

- p.32 "simultaneously dealing with people, process, and technology."
- user buy-in
- integration of RM into enterprise activities
- integrated software (RM and office etc.).

Swartz, N. (2004) 'From the mouths of CIOs', *Information Management Journal*, 38 (5), pp. 30-36.

£#768 2005 HML

Review of published/unpublished case studies showing benefits of implementing an ERMS/EDMS. **CSFs:**

CAN EDRMS RECORDS BE TRUSTED.

- Yes, but p.135 "each system must be set up after a risk analysis, and must be configured so that trust is maintained."

DO EDRMSs PROVIDE BENEFITS TO PEOPLE.

- need user acceptance
- systems that do not require significant changes in work practices
- usable systems at different levels of IT skills
- training
- promotion of system
- change management.

Johnston, G. P. & Bowen, D. V. (2005) 'The benefits of electronic records management systems: a general review of published and some unpublished cases', *Records Management Journal*, 15 (3), pp. 131-140.

£*782 2001 HML

Brief overview of research in field of ERMS. Possibilities of e-records for university archivists. **CSFs:**

- P.54 "a strategic plan for the collection and long-term preservation of electronic records" with archivists working closely with IT staff.
- "the archivist should watch technological developments carefully"
- "the archivist should continue planning for comprehensively documenting the entire university community"
- paper + e-records
- P.55 "the responsibility of the university archivist to provide information concerning the strategic plan [etc.] ... to the university administration and community."

Zanish-Belcher, T., Christian, M. & Daly, C. (2001) 'The age of the electronic document: the documenting challenge for academic archives', *Collection Management*, 26 (2), pp. 43-56.

£793 2004 MLM

Use of data-cleansing initiatives and software to ensure reliability of business data.

CSFs:

- Constant effort involved in keeping data clean: though much data is processed automatically, some requires human intervention. Ensuring that the data is clean involves manual review and perhaps several passes through the software.
- One-off cleaning doesn't work in the long term, as data quality degrades over time; needs to be constant process.

D'Agostino, D. (2004) 'Getting Clean', *CIO Insight*, (42), pp. 72-76.

£828 2007 LML

Executives from US healthcare organisations giving tips on moving to electronic payment receipt and reconciliation. **CSFs:**

- GETTING INFORMATION FROM PAYERS. Close relationships so they will provide what is wanted by the provider in the required format.
- COMMUNICATIONS. Include the technical experts in the meetings. Regular meetings. Choosing a payer recommended by other providers. Ask them questions.
- BUY IN OF STAFF. Sell benefits. Show them the value-added things they can do with time saved from routine tasks. Show them how the frustrating tasks have been done away with.
- TRAINING OF STAFF. Computer skills. Calming fears. Making interface similar to manual processing. Show how it fits in with organisational mission, strategy and goals. Streamlining the process to minimise routine actions for

staff. Communicate benefits and pitfalls in advance of change. Staff to take ownership, contact vendor directly with problems/questions, provide feedback on how system working.

'Provider Tips for Moving to Electronic Payment Receipt and Reconciliation', (2007) *hfm (Healthcare Financial Management)*, 61 (6), pp. 1-4.

£872 2006 MMM

Implementing EDMS. CSFs:

- “The old 80-20 rule applies to implementation; for the most success, focus just 20 percent of the efforts on the technology and 80percent on the cultural issue”.
- Make the process transparent (ingrain the process of classifying records into daily work processes so it becomes invisible; minimise number of keystrokes needed to save or retrieve documents; suggests users classify documents but records staff declare as records)
- Manage user expectations (better to under-sell a system and over-deliver the product than vice versa; tell users what will be delivered & when; say that productivity may go down immediately after implementation but then increase; implement policies that help users understand changing expectations (e.g. e-records will be the official record, not paper ones); “it is not possible to over-communicate what is happening during an EDMS implementation”, use different methods to “keep information flowing and set the right expectations”)
- Focus on people (show them the individual benefits first then the organisational ones e.g. easier, faster searching, improved document sharing, better security, better client service, improved vital records protection, better reporting, reduced file storage space, “overall - better decision-making based on better recordkeeping practices”; involve the right people in the change process – a combination of different “ranks” and both “those who have good attitudes and are willing to work at making processes better but also a few resisters who can be coached so their resistance will be reduced and buy-in obtained early in the process”; include them in the pilot & refine that on the basis of feedback)
- Focus on processes (consider changing the processes before customising software i.e. don't just customise software based on current processes; flowchart current processes based on discussion with people and then detail how they will be handled in the EDMS)
- Train on processes (ok to train on the software first but training must go beyond that to show how they will use it to support their work)
- Keep sight of the big picture (“be careful not to give departments or business units everything they ask for in isolation... it can lead to islands of information that create fragmented systems or multiple applications that don't talk to each other. There needs to be a coordinated effort to reduce redundancy yet maintain the necessary level of information sharing and process efficiency”)
- Understand changing communication dynamics (“communication systems change as work is created electronically. Electronic notification increases as work flows from one person to another ... EDMS usually changes basic workflow patterns but not nearly as much as implementing a workflow engine would. Work group dynamics change as users are able to share electronic information ... this causes traditional boundaries between groups and departments to disappear. EDMS can even change the relationship between managers and subordinates ... managers can view the progress on a job much earlier [in the e-environment]” but author cautions against

micromanaging vs monitoring; EDMS creates more accountability because of audit trails).

Downing, L. (2006) 'Implementing EDMS: Putting People First', *Information Management Journal*, 40 (4), pp. 44-50.

£929 2005 MMM

Opinion piece based on literature review (not extensive) about the need for capacity building in ERM in ESARBICA (East & Southern African Regional Branch of the International Council on Archives) countries. Implementing an ERM strategy for ESARBICA. **CSFs:**

- "Identification of needs and priorities; Existence of policy framework that takes into account cultural, environmental, social, and economic factors; Human resource development that focuses on education, training and continuing professional development; Active, visible and decisive support from the highest levels of government; Clear governance and accountability structures that assign clear roles and responsibilities; Clear funding arrangements that would involve donor agencies and private sector participation; Strengthening of local training institutions in the areas of e-records managements; and Creation of a conducive environment for partnerships and collaboration at both regional and international levels."

Justus, W. & Stephen, M. M. (2005) 'Capacity-building requirements for e-records management: The case in East and Southern Africa', *Records Management Journal*, 15 (2), pp. 71-79.

#946 2005 HML

Case study at The Johns Hopkins University Applied Physics Laboratory (JHU/APL). Looking at facilities documents. Paper, plans, drawings etc., electronic documents in range of formats e.g. AutoCAD, Word, Excel, PDF, PowerPoint, JPEG and TIFF. Approach: Library (which manages documents and records using a commercial DMS) in collaboration with the Plant Facilities section. Used existing DMS. **CSFs:**

- leveraging in-house expertise
- controlling the organisation, indexing and formatting of the documents at their point of origin.

Loesch, J. E. & Theodori, J. (2005) 'Document management: A case study', *Journal of Facilities Management*, 3 (3), pp. 273-283.

£952 2005 HMM

Approach to developing ERM within an organisation. **CSFs:**

- P.20 "the best path to successful ERM may be to start by instilling some rigor and technology for electronic document management and control at the departmental level. For example, organizations can deploy workgroup-level document management technology solutions in the near term while simultaneously rolling out common information organization structures and educating users about proper practices. A staged approach like this can deliver immediate business benefits to users, encouraging adoption while positioning the organization to succeed with broad-based ERM implementations in the future."
- P.20 "Weighing the requirements", e.g. business drivers (offensive e.g. improved service and defensive e.g. compliance) for ERM.
- P.21 "Focus on user benefits and adoption".
- P.21 "Getting user buy-in and acceptance is one of the keys to adoption. Proper document management, like records management, requires changes

to the ways in which users work, However, with document management it is easier to make the case to users that by doing things differently, they will actually make their own lives easier.”

- P.22 “Moving Forward. In order to successfully deploy a document management program and use it as an effective bridge to ERM, keep the following considerations in mind: * Get user input at the beginning. ... Conduct a detailed requirements-gathering exercise that involves participation from multiple business units and in which document management concepts are explained. ... Each functional area's ideas, practices, and fears must be fully heard and carefully thought through. When change is implemented, those ideas, practices, and fears must be addressed in such a way as to demonstrate that they were heard. * Develop a general organization structure for documents [taxonomy]. ... It will also introduce the type of rigor that can be leveraged when the organization rolls out ERM programs or technology initiatives in which information classification is a critical component. * Create baseline expectations for document management practices. ... * Do not short-change management support and communication of user benefits. ... * Start expanding the organization's strategic focus beyond electronic documents.”

Medina, R. & Fenner, J. (2005) 'Controlling Your Documents', *Information Management Journal*, 39 (1), pp. 20-22.

#1001 2004 MML

Implementation of an electronic healthcare record system at the Florida Hospital, Orlando, US, a multi campus, acute care hospital system. P.40E “Project coordinators chose advanced clinical applications from Siemens Medical Solutions Health Services Corporation to integrate with Florida Hospital's self developed financial and patient-management system. The project aimed to automate the current clinical documentation process, including assessments, diagnostic test results, medication/I.V. charting, case reviews, orders, demographics, and allergies. **CSFs:**

- P.40E “This initial strategy was both broad and deep, attempting to automate documentation and clinical best practice guidelines in one major implementation. After three years, project coordinators determined that a better approach was necessary. In 2001, Florida Hospital decided to reach its goal through a series of smaller incremental steps. The revised plan proved extremely successful, enabling all seven of the system's hospitals to go live within 18 months.”

Hamilton, C., Jacob, J. M., Koch, S. & Quammen, R. L. (2004) 'Automate best practices with electronic healthcare records', *Nursing Management*, 35 (2 [suppl]), pp. 40E-40F.

#1013 2003 HMH

Description and discussion of a failed ERM pilot. P.44 “The State Archives of Michigan and the state's Records Management Services began discussing electronic records issues more than 25 years ago. In 1998, the two units collaborated to create a Michigan Government Electronic Records Committee (ERC), with representation from a variety of professional disciplines.” P.44 “Ultimately, the ERC wanted an automated solution for classifying electronic records created by desktop applications - such as e-mail and word-processed documents - and implementing retention requirements.” Used the DoD RM standard and chose ForeMost Enterprise. Ran pilot from May 2000 to September 2002 in the Department of Management and Budget (DMB) and the Office of Support Services (OSS). **CSFs:**

- Support of the director of the OSS.

- P.46 “The records administrators developed file plans for groups of users based on their shared responsibilities. ... It is essential that users have a sense of ownership and control over their file plan. Therefore, users must help develop their file plan, which needs to be based on users’ current work processes. This helps users understand where to store their records and promotes accurate filing.”
- P.46 “the project participant’s cooperation was imperative.” Each group of users reviewed and provided feedback about their proposed file plans. This input was crucial (1) to give the participants a sense of ownership of the file plan and (2) to create a file plan that the participants would recognize, understand and feel comfortable using to file documents. Therefore, some drafts were revised several times to accommodate participants’ needs.”
- P.49 “However, effective file plans are only one component of a successful RMA software installation. Eventually, people have to use the file plan”. [This did not happen.] However, top administrators must accept responsibility for ensuring that their agency’s records are properly managed. Without their support, sophisticated software tools will be useless.

Wojcik, C., Gouin, D. & Dionne, M. (2003) 'Managing Electronic Records in the 21st Century', *Information Management Journal*, 37 (6), pp. 44-50.

#1025 2003 HMM

(See also #717 1999 HMM)

Early stages of the US Environmental Protection Agency (EPA) ERMS implementation. **CSFs:**

- P.59 “how it [the ERMS] will integrate with legacy and future information management systems.”
- P.63 “prior to implementing an ERM system, the enterprise must update its records inventories; records retention schedules, especially schedules for e-records; and file plans. ... A thorough and efficient RM program is an essential prerequisite to a successful ERM system.”
- Need to set up access controls to protect privacy and sensitive information.
- P.64 “when designing the ERDMS’s file structure and access controls, it is vitally important to consult with agency departments and users groups.”
- P.65 “For ERM to become fully integrated into the IT systems environment of an enterprise, attention also must be paid to the macro-level politics and processes at work.”

Fernandez, L. & Sphere, J. T. (2003) 'Integrating an ERDMS in an IT Environment', *Information Management Journal*, 37 (4), p. 58.

£1080 1999 HMM

Integrating EDMS functions & RM principles. **CSFs:**

- P.26 “Success of these initiatives must focus on an integrated approach at the enterprise level. A common enterprise strategy for document and records management should address classification and indexing (metadata models), repository design, life cycle management, and integration with the information technology infrastructure.”
- P.27 The keys to success are (1) focussing on the core functions and benefits of integrated EDMS/RMS solutions and (2) building enterprise models that support unified information management.”

Strong, K. V. (1999) 'Integrating EDMS Functions & RM Principles', *Information Management Journal*, 33 (3), p. 18.

#1089 1998 HML

Merrill Lynch setting up a Web-based information system (WIS). Looked for a document management system to integrate with the WIS. Chose Documentum. Used a systematic design methodology. **CSFs:**

- Systematic design methodology for WIS.
- WIS causes radical changes in work processes and thought processes. Work processes need to adapt to the Web.
- Need for product standards to prevent the myriad of tools and techniques and lack of interoperability.
- Document management support for WISs.

Balasubramanian, V. & Bashian, A. (1998) 'Document Management and Web Technologies: Alice Marries the Mad Hatter', *Communications of the ACM*, 41 (7), pp. 107-115.

#1092 1998 HMM

Electronic imaging system at Pacific Northwest National Laboratory. **CSFs:**

- "Plan sufficient hardware and software for all users up front. ... Plan for any backlog of records ... Don't plan to install a system and consider that "the end of it." Plan on expansion and enhancements that will change the way business is done. Plan maintenance and repair costs ahead of time--who will be responsible for it and what will it cost? What kind of response time do you need?"
- Need to interface with other systems. "If the system being planned must interact or interface with another system, be sure that all parties are aware of the deadlines and the effects of the merger. If the system being planned must interact or interface with another system, determine how to know who has the responsibility for problems that occur."
- "Budgeting should always include money to upgrade or add enhancements."
- "Recognize that the system will grow rapidly."
- "The staff learned how to use the database in the imaging system to research some of their problems and to resolve them, without having to call the vendor/consultant. ... The leading-edge technology that required such a big change in the way things were done made the staff's jobs more interesting and challenging."
- "The customer support for problems, in our case, has been handled by the vendor who is out of state. More recently we have acquired the services of an onsite hardware technician."

Berndt, V. L. (1998) 'Reality check--Lessons learned after implementation of an', *Records Management Quarterly*, 32 (2), p. 3.

£#1115 2007 HMM

P.588 "This article surveys electronic information management in blood donation and transfusion service, and explores the rationale and archetype of blood bank information systems, then exemplifies a successful in-running system—Sistema Integrado de Bancos de Sangue (SIBAS), which is developed by the Institute of Systems and Computer Engineering of Macau (INESC-Macau) in cooperation with the Macau Blood Transfusion Center (CTS-Macau)." **CSFs:**

- The 24/7 uninterrupted running mode of blood bank information systems requires a quick response for technical support and service, especially for disaster recovery.

Li, B. N., Chao, S. & Dong, M. C. (2007) 'SIBAS: A blood bank information system and its 5-year implementation at Macau', *Computers in Biology and Medicine*, 37 (5), pp. 588-597.

***#1177 2003 HHH**

Results of questionnaire survey to investigate user acceptance of an anaesthesia information management system (i.e. e-records system) in a German hospital 5 years after implementation. **CSFs:**

- Emphasises the strong influence of adequate training on user acceptance & recommends a 3-step training strategy: (i) inform employees of planned system installation before implementation; (ii) provide "general on-job training"; (iii) opportunity to work on individual problems with users.

Quinzio, L., Junger, A., Gottwald, B., Benson, M., Hartmann, B., Jost, A., Banzhaf, A. & Hempelmann, G. (2003) 'User acceptance of an anaesthesia information management system', *European Journal of Anaesthesiology*, 20 (12), pp. 967-972.

***1346 2007 HHL**

Survey of use of interoperability (IO) frameworks and enterprise architectures. Focus of survey on methodological tools (frameworks, architectures) devised by e-Government agencies in connexion with IO. **CSFs:**

- Commitment and progress in model definition by CIOC (US—CIOC (Federal Chief Information Officers Council). gives achievement of IO a good chance of success.

Guijarro, L. (2007) 'Interoperability frameworks and enterprise architectures in e-government initiatives in Europe and the United States', *Government Information Quarterly*, 24 (1), pp. 89-101.

£1366 2007 HMM

Enterprise content management. **CSFs:**

- Leadership. Top down. Executive support and direction. Project leader to implement the ECM system, with project management and people skills. P. 31 "governance committee of individuals from various functions across the organization, This committee must be diverse and inclusive, comprising a combination of people - management and non-management and technical and non-technical positions".
- Methodology. P.31 "should include certain basic steps: * Determine the needs, goals, and expectations of the organization [both key stakeholders and users] * Create an inventory of all environments [systems, software, tools etc. rogue tools, information routes 'flows, storage locations] that ECM will comprise * Identify possible solutions and assess against established * Test the solution as well as the various vendors under consideration [functionality, up front costs, implementation costs; proof of concept mini pilots] * Gain executive approval of the proposed solution."
- Change Management. Strategy: plan for full change lifecycle, including metrics of success; change champions, [representing each functional area, and not members of the committee]; communication and training.
- Records Management. p.34 "The importance of records management infrastructure to the success of ECM cannot be overstated." RM is everyone's responsibility. Senior person responsible for RM with RM expertise. Records co-ordinator in each function, working in the function but acting as liaison between the staff/users and the records managers. RM policy, procedures and retention schedule. Communications plan using all corporate services

and techniques. Training of all staff, via an holistic approach using effective methods. Then annual review of the RM infrastructure.

- Taxonomy. Constantly developing taxonomy, thesaurus and metadata capture.

Bridges, J. D. (2007) 'Taking ECM from Concept to Reality', *Information Management Journal*, 41 (6), pp. 30-39.

£1368 2007 HML

Evaluating ERMS for purchase. **CSFs:**

- P.28 "Integration with present and planned business and infrastructure environments that are already in place [real level of integration] * Vendor partnerships [e.g. technology partners, systems integrator partners, reseller partners, risk if these breakdown] * Operating systems and databases [same as the organisation, version used and how they have been configured] * Web-based or client/server-based access of key functions * Auditing and reporting * Licensing [can be very complex] * Company ownership [of the vendor, and its sustainability] * Overall usability and training."

Emery, P. (2007) 'Beyond Features and Functions: Evaluating ERM Software Alternatives in a Real-World Environment', *Information Management Journal*, 41 (1), pp. 28-35.

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