

ARE YOU **STILL** USING THAT VERSION!

**A PAPER ON DOCUMENT CONTROL -
THE ART OF SYNCHRONISING DOCUMENTATION**

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1. Document Control - the art of synchronising documentation

1.1 *Why have document control?*

A document control system costs money to set up, can be resource hungry to run and doesn't add to the bottom line. So why have it?

Document control is one of the necessary evils in any organisation that wants its members to perform the same tasks the same way. Whether operating machinery, pricing a tender, assembling a component or acting in an emergency - the actions and output should be uniform irrespective of which staff member does the job.

Documents are used in one form or another to distribute the information needed to perform these tasks throughout an organisation, and at times outside the organisation to sub-contractors or resellers. But unless everyone is using the same information - you have a recipe for disaster. And this is where document control can provide a tool to ensure that everyone literally sings from or at least have access to the same hymn sheet.

Surprisingly many organisations – including some very large multinationals - have poor document control systems and experience regular problems with quality, safety as well as commercial hiccups because of it.

Document control is of course only one link in the chain. But combined with good documentation and an efficient training system to deliver the information, it can play a key part in an organisation's performance.

1.2 *Aim of this paper*

The aim of this paper is to work through the various stages of setting up and running a document control system, to point out the problems that may be encountered and suggest solutions to some of these problems. Problems can of course be solved in many different ways and the solutions offered here are by no means the only ones.

The paper will look at controlling both hard copy and electronic documents. There has been a trend over the last few years to move towards electronic documentation but it is still rare to have electronic copy only. More often hybrid systems with both paper and electronic documentation are needed.

So a document control system need to be able to handle both. The advantages and pitfalls of electronically distributed documents will be discussed but one issue should be put to rest right now – just making documents available on a central server, does not constitute document control.

It is "assumed" that the document control system itself will be a database of one form or another - there are several commercial databases available. For very simple systems a card system can be sufficient but as the system grows a card system quickly becomes both inefficient and difficult to manage. Even a small system of say 100 documents distributed to an average of 10 recipients each, means that there are 1000 distributed documents out there to keep track on!

Whatever system is implemented, always keep in mind that the system must serve the "Customer" i.e. the recipient well. If it doesn't - it has failed.

1.3 Definitions

Document: Almost anything conveying information like a printed document, a drawing, a picture, video, component sample, electronic data file etc - but not the spoken word.

Controlled document: A document whose content and distribution are controlled throughout it's entire life cycle from conception through any number of updates until obsolescence.

Document control: A system designed to ensure that:

- recipients have access to the current issue of controlled document issued to them
- recipients are made aware of any changes to controlled document issued to them
- superseded or obsolete documents are prevented from polluting the system.

1.4 Document control steps

In a controlled document environment (electronic or hard copy) each document must pass through the following stages:

- Document design
- Document code
- Approval
- Distribution
- Changes / updates
- Re-approval / redistribution
- Reviews
- Obsolescence

2. Document design

Any document can be controlled but some are easier to control than others.

Large one piece documents or procedures are easy to control initially but very inefficient when it comes to updates. No document will be written and never changed. Even the Ten Commandments were updated before release. So consider any document to be chiseled in polystyrene, not in stone.

A minor change - even a misspelling being corrected - requires the entire document to be re-approved and reissued to all recipients - a wasteful exercise for a large document.

A more efficient way is to divide the document into chapters.

Make each chapter a few pages only and start each chapter on a new page. Tables or lists with frequently changed data (like telephone numbers) can be separated out to "data

pages” making updates simpler. Number chapters and data pages sequentially. A document set up in this manner is easy to update as only the changed sections need to be reissued. It also makes it possible to issue only selected parts of a document and finally it makes it simpler for the recipient to see where the changes are.

For electronic distribution it is not so much of a problem to have large documents. But recipients still need to know where the changes are.

3. Document code

Each document has to be assigned a unique code or number.

Many organisations try to squeeze in as much meaning as possible into their document code. Subject, division, department, number, writer, when it was created and so on leading to quite complex alpha numerical sequences. It can in fact be quite detrimental as each document recipient has to struggle through a long code to identify the exact document from the index. It is slow and easy to make mistakes!

It is my experience that these codes are fully understood by only a select few and the people actually using the procedures and instructions have little idea what they mean. By using a computerised data base there is no longer a need to complicate things - the database can hold all the information you need, produce any cross references you want and present them in a logical manner. In essence - keep the code simple.

The coding system described below has been used in several large document control systems with no problems.

Use a combination of a letters and figures and start with the full amount of characters that you intend to use i.e. ABC-0010 rather than ABC-10 (ABC can represent a division, function, subject area or whatever is useful).

The reason for using the full amount of characters is that some databases will not sort what we interpret as sequentially unless you have the same mix of digits for all your codes. In the example above it will sort each digit in order, first all the A's then the B's and so on.

Leave a gap between numbers like ABC-0050, ABC-0060, ABC-0070. This method will allow you to add related documents later like ABC-0051 and ABC-0052 and they will be listed in indexes next to each other.

For large documents divided into chapters, code each chapter as an individual document. Use the same main code but add digits to show each chapter; ABC-0050C1, ABC-0050C2, ABC-0050C3 and so on. Data pages belonging to the same document are numbered ABC-0050D1 and so on.

4. Approval

Each controlled document must be approved before release. The approval should be given by the document "Authoriser" or "Owner". The owner - there can be more than one - is responsible for the content of the original document. The owner will also approve any subsequent changes or updates to the document as well as perform periodic reviews of it's content. A controlled document cannot be released until approved, nor can any changes be made until the owner has formally approved them.

At times it is useful to have more than one owner. For a machine operating instruction the Production Manager can be one owner and the Machine Operator the other.

The Production Manager will ensure that safety and quality issues are adhered to and the Machine Operator that the instructions are both practical and will yield the desired result.

Neither owner can approve changes on their own.

The document writer should not normally own a document.

The owners should be shown on the document so that it is easy to know whom to contact if changes need to be done.

Use positions rather than names of owners. This makes the system simpler to manage when people move from one position to another.

Approval can be shown with a signature on the Master document.

For electronic documents a separate procedure can be set up where the documents are kept in a read only folder (directory). Only persons with read/write authority can change a document. Keep a hard copy of each document as a Master Document. The Master is signed by the owner(s) to show that approval has been given.

5. Controlled document appearance

Each page of each controlled document require to have some basic information displayed. The following (at least) should be included: Document code, Version, Date of last update, Page Number, Authoriser or Owner. See example:

Document PTS-0030, Ver 14, 12 January 1999 Authorised Operations Manager, Page 2 of 3
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Each document should also be marked, printed or stamped to show that it is a Controlled Document. There are many ways of accomplishing this.

Below is an example of a red stamp that was made up for a small system to stamp each controlled document before release. If the document was photocopied the stamp came up in black and the document was no longer controlled.

Controlled Document
If this is Red - It is Controlled!

For larger system it is worth printing up some controlled paper with text and colour to suit. In this case keep the Master document with the owners signature on plain paper and simply copy onto controlled paper for distribution.

6. Document distribution - hard copy

Each controlled document is distributed somewhere. If it wasn't there would be no need to control it.

Distribute documents only on a need basis. If people don't need a document why give it to them? We all get enough paper to read as it is.

6.1 Distribution list

When you set up the document distribution give the recipients "neutral" names like "Operations Manual 10", "Policy Manual 2" or "Cafeteria notice board". Then assign a person as the holder or caretaker of a specific manual or with responsibility for a notice board. The distribution of documents to Operations Manual 10 then remains unchanged, only the caretaker changes as people come and go.

Documents are frequently issued outside an organisation as well as internally. This can be drawings or specifications to a sub-contractor, price lists to a reseller etc. Follow the same pattern - Name the recipient say "ABC Company" and assign a person within that company as the caretaker for the documents.

6.2 Index or table of content

Some people will receive a large number of documents, some just a few. A Production Manager may receive 200, a Machine Operator only ten. Whatever the number of documents, each recipient should get a table of content or index listing only the documents issued to them. This index should as a minimum list each document code and name, version number and or last issue date. Other information like subject areas are useful additions. Each time a new or updated document is issued to a recipient it should be accompanied with a fresh index.

A Master index listing all documents in the system - current as well as obsolete documents is a necessity. The master index should list all of the above as well as the owner of each document and the location of each original document - physical or electronic. A Master index is required by some standards like ISO 9001.

6.3 Distribution loop

To ensure that the recipient actually receives a document and that the sender knows that he/she received it, set up a simple distribution loop.

To create a loop:

- Record when a document is distributed (code, version, when, to whom).
- Include a "transmittal notice" listing the documents sent to each recipient.
- Recipients signs and returns the transmittal notice to acknowledge receipt of the documents.

- Record when the transmittal notice is returned - thus closing the loop. File the transmittal notice.

If the transmittal notice is not returned the loop remains open indicating that something has gone wrong.

Some senior managers let their secretaries manage, file and sign controlled documents issued to them. As a result the secretaries becomes very well informed but the manager may not be aware of changes in policy documents issued by HO. It is important that the actual recipient signs the transmittal notice.

7. Document distribution – electronic copy

Electronic distribution eliminates some of the problems of hard copy distribution but does introduce some new ones.

Generally electronic documents are not distributed per se, but made available for people to read over the network or on an intranet site. Documents can be placed in different directories with different access rights, thus controlling who can read what.

There are some issues with this type of system that need to be addressed e.g. if a document is printed it is no longer controlled and this needs to be shown. One solution is to print “This document is a non controlled document after << today>> at the top of each page. The word processor inserts today’s date at the << today>> location.

Another issue that may have to be addressed is that a read only document may be downloaded, altered and printed, thus by-passing the approval process. The use of Adobe Acrobat’s .pdf document format can overcome this problem.

7.1 Distribution list

Set up a distribution list in much the same way as for hard copy distribution. The reason for this is that even though people may have instant access to documents, they still need to be advised when changes occur in documents that affect them. There may be 5000 documents on the server – but who is going to trawl through all of them once a month looking for updates? It is not good policy to advise everybody of every change - the production supervisor may not need or want to know if there is a change in a price list.

7.2 Index or table of content

Place an electronic index on the server or intranet site. It need to be updated each time a document is updated or added. The index must also display it’s posting date.

Recipients of electronic documents need not normally be issued with a personalised index, although the system should be able to produce one on request.

7.3 Distribution loop

The distribution loop is similar for electronic and hard copy documents. Recipients need to be advised when a new document has been issued to them or if an existing one has

changed. A response will be required from each recipient that they have received notification about the change or new document and that they have sighted it. The loop can be set up as for hard copy but with only the transmittal notice being sent out. The transmittal notice can be paper or an electronic version. For the latter to work a system is required to show the transmittal notice has been received correctly. However it is our experience that a paper transmittal notes works best. We all get large amounts of email and it is just too easy to tick the email with the intention of catching up on the document changes later.

8. Changes / updates

In any system improvements in task and processes will be identified from time to time and the associated documentation need to be changed quickly to reflect those improvements. The document control system will ensure that everyone performing the same task will be made aware of the changes and thus gradually lift the performance of the organisation.

There should be a simple way for people to suggest improvements to the way jobs are being done. Whether the suggestions are made formally in writing or verbally - they should all be considered and if valid - implemented. If the process of change is too difficult or too slow the system will stagnate and eventually the entire documentation will become obsolete. This can happen very quickly. There are several instances where systems documented at great expense have become almost irrelevant inside two years.

9. Re-approval and redistribution

The update process is very similar to the new document process with one important difference.

Once a change has been approved by the owner(s) the change needs to be shown in the document. Word processors like MS Word have facilities that automatically "redline" any changes making it easy for a recipient to see where changes have been made. Changes to a picture or a sample can be high lighted - there are many different methods. Whichever methods are used they should be documented so that recipients know what to look for.

Finally the document is given a new version number and last update date and reissued complete with a fresh index and transmittal notice.

The superseded hard document is either destroyed by the recipient or returned with the transmittal notice. Electronic copies are simply overwritten on the server.

Note: Keep a copy of each superseded document in a "history file", to enable changes to be traced. The history file can be hard copy or electronic.

10. Review

To ensure that documentation stays current it should be reviewed from time to time. This is another task to track for the document control system.

Set a review time for the system (say annually) and as each document becomes due it is forwarded to it's owners for review. This is an effective way of catching up with processes that have changed but the changes have not been documented or processes that are no longer in use.

A review may result in a change and then the document is re-approved and reissued. But if no changes are required the review date is just recorded and no further action is required - until next year.

11. Obsolescence

Every document has a finite life span and will eventually be withdrawn from circulation.

When the time comes create a "Withdrawal" notice and send it out to each recipient of the obsolete document together with new index.

The index should list the document as obsolete to prevent it accidentally being used until it has been removed from the system.

A withdrawal notice is similar to a transmittal notice and is signed and returned by the recipient acknowledging that the obsolete document has been destroyed or returned with the notice. Record that the document is no longer held by the now ex recipient.

The next time this recipient receives a new or updated document the obsolete document should no longer be shown in his/hers index.

The obsolete document is consigned to the history file with a note of when it was made obsolete. The master index should list the document as obsolete for the life of the document system.

12. Document references

In any document system it is common for documents to make reference to other documents like standards, test procedures, regulations etc.

If document A, B and C all makes reference to a standard D and standard D changes or is made obsolete, it is important to identify all documents that makes reference to D. The references need to be checked to ensure they are still valid or indeed be deleted.

The first half of the reference process is simple to accomplish. List all documents that the current document makes reference to in the header or footer.

The second part is harder. A system is required that can display all documents making reference to a specific policy, standard or other document. This can be accomplished with a matrix but the method is cumbersome and the matrix will become very large - you'd measure in square meters! The most efficient way to track references is to use a database.

13. Training

Documents are often used to train people to do a job. For work instructions that is really the sole reason why they exist.

When for example a work instruction of how to mix glue is changed or modified it is not enough to just distribute the new work instruction and hope that from now on everyone will follow the new instructions. Some might and some certainly will not.

So the document control system need to link up with the training system. Whenever a document that is used in training changes, there must be a system in place to identify all those that are trained against it and initiate refresher training.

Other wise the model of gradual improvement goes out the window.

14. Closing

When setting up a document control system there are quite a few factors to take into account as can be seen from this paper. Not all systems need all the bells and whistles but all systems need quite a bit of thought to make sure that they are both efficient to run and that they deliver what is required. There is little point in having a system that requires ever increasing horse power to run, nor one where the odd document slips through the cracks.

Most In house developed systems - manual or computerised - are adequate initially but as demand grows, struggle to keep up. When staff changes, skills are lost and the system often crashes. It is cheaper and more efficient to purchase a program specifically designed for document control. Few organisations these days design their own word processors - so why design your own document control system? There are several available - it is only a question of what they can deliver at what cost.

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