Martin Ternouth's Paper-based Work System

This is a copy of Ternouth's comments on Edward Tufte's website, in a discussion on Thinking and Paper.

June 13, 2002

I like to think that I have - over the years - devised a personal operational work system that combines the benefits of both chaos and organisation. It is completely paper-based, although I have had a computer on my desk since 1982. It is actually a fully-specified system but I won't go into all the details, just the core bit. Everything coming in is printed or noted on paper. That paper is then slipped into one of say a dozen clear plastic folders which are kept in a tray (sometimes two or three) called Work In Progress. One of those files may otherwise be in a tray called Current Task. Paper from the folder in Current Task (but only that folder) can be scattered all over the desk in whatever order or chaos best serves to carry out the task in hand. If the task is interrupted for more than a phonecall then all the paper goes back in the folder, the folder goes back in Work in Progress - and another folder becomes Current Task. As the folders fill up they are culled: in effect I use a *kanban* system to restrict their size. Since paper is filed in the plastic covers loose in the order in which is was last looked at, it is an easy matter to take out the bottom half of each file, flip through it for anything archival (not much, usually - that's what we have computers for) and drop it in a Xerox box under the desk. Anything not looked at for a month in the box gets dumped.

The beauty of the system is that everything scattered on the desk is current (so no hunting around for things that might be missing) and the fact that once a week I can skim-read every piece of paper in the files (1000 to 2000 pieces say) in about thirty minutes and pick up dependencies, connections, forgettings, omissions whilst the file is held in my short-term memory for that half-hour.

Impossible to do on computer.

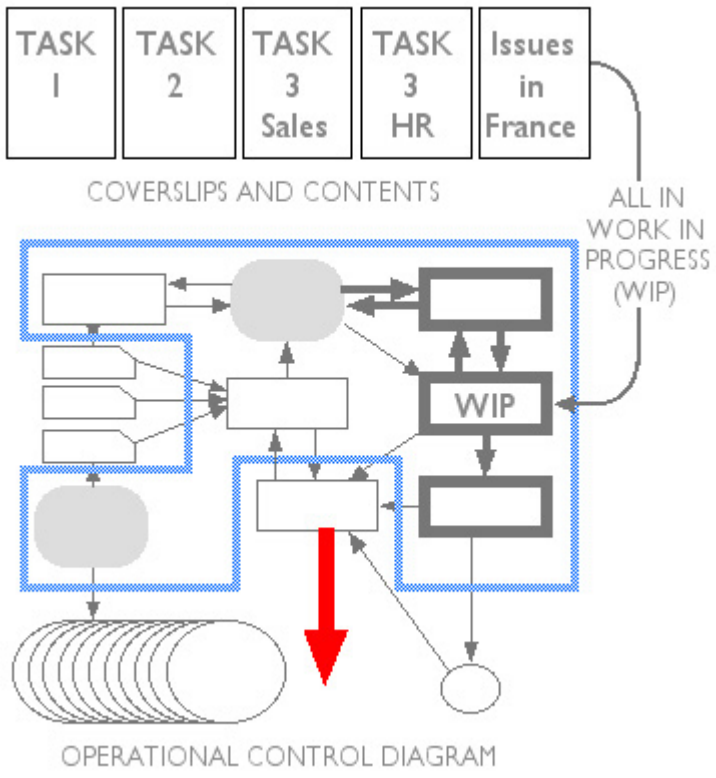
December 15, 2003

This is a follow-up to a post I made on this thread eighteen months ago. With the illustrative diagrams it's rather long - but I hope it gives a useful addition to the problem of dealing with paper.

Twenty years ago I was in a job that combined three competing timescales: Corporate Planning, which was looking ten years ahead; several large systems projects that required operational planning and monitoring over eighteen months; and a payroll department paying 15,000 staff — any one of whom could turn up very angry without notice and insist upon seeing me. My desk system had to have all operational information immediately to hand, but in such a form that it could be cleared instantly: either to receive a hostile visitor complaining of a mispayment, or to substitute the paperwork for another complex problem totally unrelated to the last. To serve these functions I devised a paper-management system that has

remained substantially unchanged for the last fifteen years. I now work as a consultant and independent project manager and the system enables me to replicate the same working environment wherever I go, and whoever the client may be. Until the last five years or so I had vaguely assumed that my desktop computer would eventually take over all the functions but I have now come to realise that it probably won't. It still takes far, far longer to access and review on computer, say, 2,000 separate pages of documentation in a dozen software packages, than it does to flick through those pages on a desk. You can flick through paper in thirty minutes. With a machine you are looking at several hours — and you can't flick back instantly to something you looked at five minutes ago.

Paper is kept in the system in two forms: loose, when it is being worked on, and in coverslips when it isn't. All current documents relating to a task are kept in a transparent coverslip. The type of coverslip used is closed on two sides only so that the contents can be extracted as easily as possible. The coverslip contains a title sheet at the top of the pile that has the name of the task written at the top (TASK 1) and the bottom. This first sheet also has a space for handwritten notes. If the documents form too bulky a pile then the task is split into two coverslips (TASK 3 Sales and TASK 3 HR) with a reference to each on the front sheet of each. Operational files may also be needed that cover several tasks (Issues in France). These also are each contained within a coverslip. All these coverslips are stored in a tray, or trays, called Work In Progress (WIP).

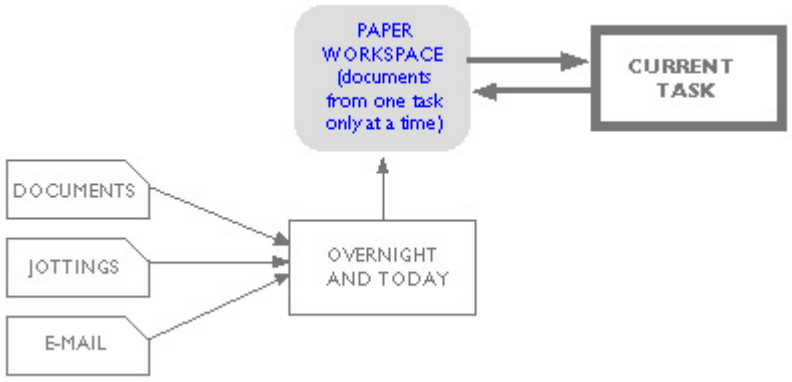


There is no specific order to the paper within the coverslips. It is a principle of the system that every piece of paper is looked at once a week. In practice, the most recently-referred to pieces of paper are near the top: this facilitates culling in due course. This weekly review is the key to the system's success. It means that dependencies and inter-relations are continually being exposed and examined and held in human short-term memory whilst the review is being carried out. Flicking through paper does not involve any mental effort: certainly far less than logging in

and out of documents on a screen.

Every tray or space is governed by a series of rules that are easy to implement and require no effort to maintain. Most of the rules relate to time, but there is an overarching rule that any tray or box that becomes full is attended to immediately. This I have understood is, or was, a feature of Japanese production lines: a physical space, or kanban, is allocated for the output of a process and as input to the next process. If a kanban becomes full, then inputs cease to be added and priority is given to reducing the contents to an acceptable amount.

The system is initiated by a very simple series of processes.



Work comes in. It can be formal on paper, jottings on a telephone call just received, or a printout of an email with information that will need to be referred to frequently. All this paper is put loose into a filing tray marked Overnight and Today. There is one rule for this tray:

- Overnight and Today must be empty at the end of the day.

The Paper Workspace, is normally the square yard or so of the desk beside the computer. This can contain any amount of paper in any order or piles or scatterings. There are three rules that govern the use of the paper workspace.

- Paper Workspace must never contain paper from more than one task
- Paper Workspace must be cleared when current task is completed
- Paper Workspace must be cleared at the end of the working day

In the simplest situation all this work is all for the same task. You put the paper from overnight and today into the workspace, works on it until whatever you are doing is finished for the moment (or until you are permanently interrupted) at which point it goes into a coverslip in a filing tray labelled Current Task. When you are ready to resume work on it the contents are taken out and scattered in workspace as before. There are two rules for Current Task:

- Current Task must contain paper only in a coverslip
- Current Task must contain only one coverslip and contents

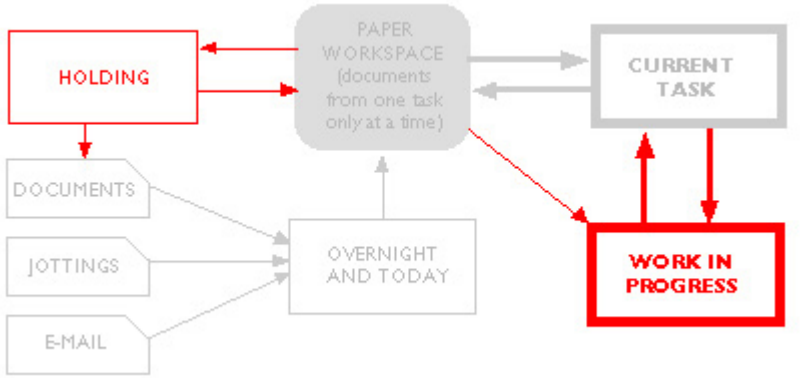
Immediate Advantages

The first advantage of this system is that it grows organically. Task files are not set up until they are needed. The second advantage is that the system recognises that people work best when they have paper to shuffle around, make notes on, place

side by side, clip to or unclip from. The third advantage is that paper never goes missing because the chaos of paper on the desk is all from one task.

Multiple Tasks and 'Too Pressured Today'

It is a fortunate (or very bored) executive who only has one task to control. New tasks are dealt with in exactly the same way as the first. However, because there can only ever be one current task, the new coverslips are stored in the filing tray called Work in Progress. From time to time they will become the current task.



Loose paper is never passed between these trays, only in coverslips. New documents (or documents that may have become misfiled) can of course be transferred into coverslips.

Pressure of work will often prevent you from giving thought to everything in Overnight and Today. Anything unattended during the day or at the end of the day to is dropped into a tray or box on the desktop called Holding.

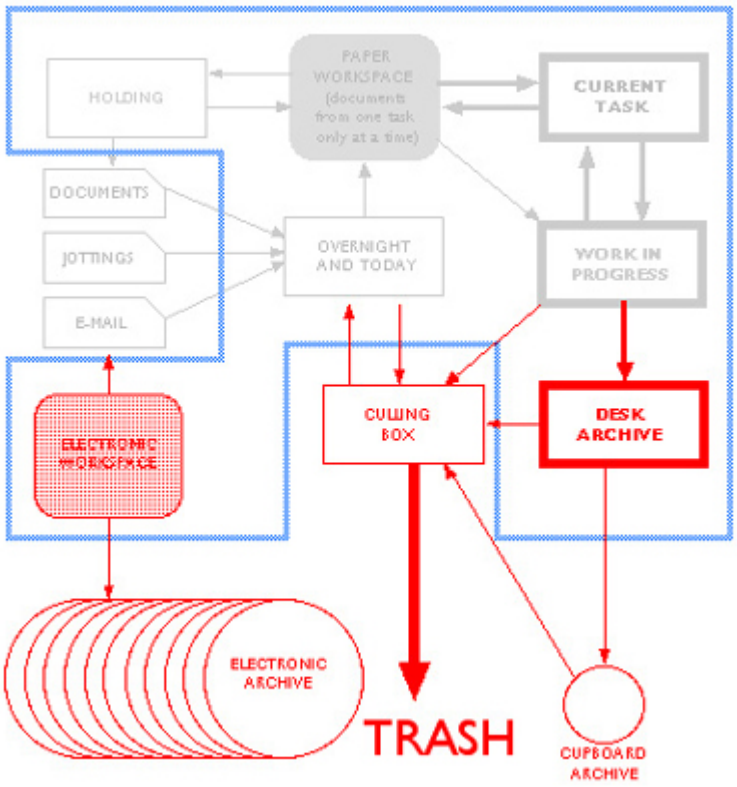
More rules:

- Work In Progress is thinned out (or expanded) when full
- Holding is reviewed every day, and thinned out when full
- Documents from holding may be passed back into overnight and today. The purpose of the system is not to dispose of documents but to ensure that they are regularly reviewed.

Review of Tasks

All tasks in Work In Progress and Current Task are reviewed once a week. Every document (say 1—3,000) in work in progress and current task is scanned through. It will normally take less than half-an-hour,

The Remaining Elements and Processes



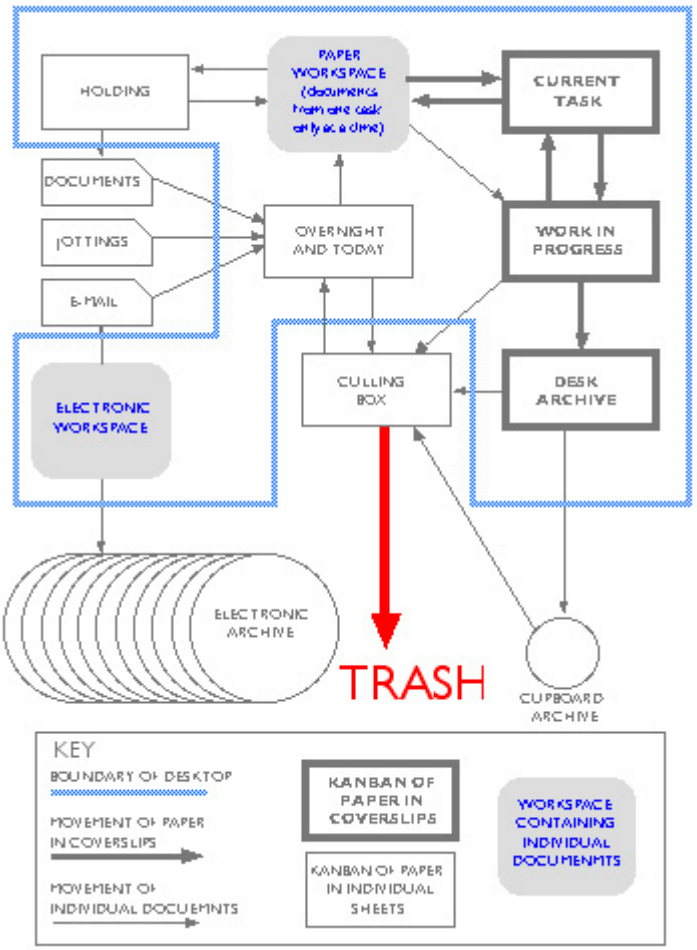
The blue border represents the conceptual boundaries of the desk. The desk of course is rectangular or L-shaped like any normal desk! Very large bound documents do not fit well into this system. As far as is possible they should be accessed on the screen (Electronic Workspace) in conjunction with the paper processing in paper workspace, and individual copies of pages can of course be printed out. Where this takes too much time, a separate archive of bound documents may be kept on the desk. This is Desk Archive.

As a general rule, all documents are filed electronically (Electronic Archive). Some formal project documents may need to be kept on paper: Architect's Certificates, purchase orders, and formal sign offs as example. These are not part of operational work control and should be kept in a Cupboard Archive or filing cabinet. The frequent review process will lead to a continual winnowing of paper. This is dumped into a Culling Box (an empty box of photocopier reams is ideal) and this is reviewed when it becomes full. This is a last backstop to prevent anything valuable being thrown out. Anything having lain undisturbed in the bottom of the culling box for a month or so can safely be placed in the Trash.

Minor Notes

The system operates perfectly as described in the foregoing pages. Attempts by well-meaning (but misguided) colleagues to graft on Pending trays and Bring-forward files, and to file the work in progress alphabetically in punch-hole files, have all ended in miserable failure. The system is designed to keep paper mobile and instantly accessible. Pending trays and Bring-forward files hide it out of sight. Files live in cabinets and cupboards, preferably virtual. A list of work in progress (including current task) can be useful, pinned up on a cubicle partition. Written by hand on a sheet of A3 it can contain notes for instant reference in response to a phone call. The trays can usefully have a sheet of coloured paper placed on top of them after review (with the time of last review) so that new work is separated from

sheets that have previously been looked at.

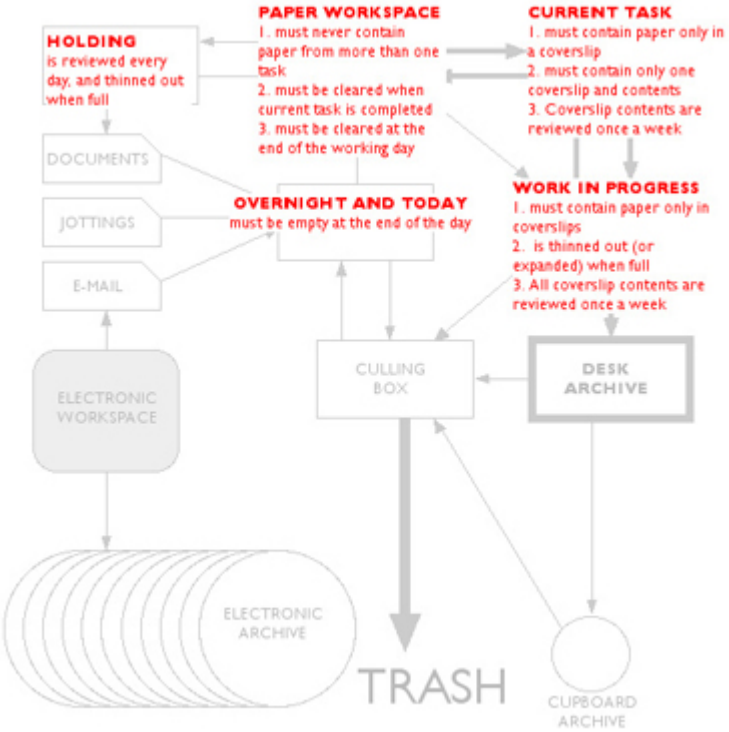


The full system takes less than a day to set up. There is no maintenance time separate from the review of the documentation, other than a few seconds occasionally sweeping a deskful of documents into a coverslip, and further set-up tasks such as expanding kanbans. There is considerable time saved from the following:

- Being able to find any document within seconds
- Never losing any documents
- Not having to sort filing into alphabetical or any other order
- Arriving at a clear desk in the morning

The system does not tie you to your desk — quite the opposite. Nearly all the archive filing and the project chart and other documents are electronic. Task files can be pulled out and will have the advantage over punch-hole files that only current information is included. Also, all the documents are available to any other member of the team or the office who can operate the system in your (frequent) absences with virtually no training. The system holds information in piles, but the piles are labelled.

The following is a summary of the rules.



March 29, 2005

I have extended the same principles to the management of my computer space.

Multiple desktops - available in OS X Macs and anything running UNIX or LINUX

I have seven that I can switch between instantly:

1. Functional workspace: for housekeeping tasks (backups as example), for watching DVDs, listening to iTunes, and for one-off applications such as scanning.
2. Web-browsing: I have Safari up continuously with eight tabs:
    - BBC News
    - Ask ET
    - www.ItsYourTurn.com (chessplaying website)
    - www.Heavens-Above.com (chart of the night sky for the evening)
    - www.bluesheepsoftware.com (prototype website for our Virtual Library System)
    - Three tabs for occasional sites and Googling
3. Current task 1
4. Current task 2
5. My own version of Virtual Library with 3,500 odd books
6. Radio: streaming BBC 2, 3, and 4
7. Kanbans: to record the current state of the Paper Management System Kanbans

Multiple desktops mean you can switch from clutter to clear instantly. Having Expose for All and for All Application and for Clear at three corners also speeds up finding and sorting. It is difficult to measure one's own progressive productivity but I would estimate that multiple desktops, tabs in Safari and Expose save me five to ten minutes an hour, and more when I am multi-tasking.