The Benefit of Paperless – an economic argument

The Cost of Paper

Many companies struggle initially with the cost of migrating to a paperless environment. Several valid arguments have been made for the Return on Investment (ROI.) We gave attempted in this document to provide you with a few of the positives.

In the end, the determination to go paperless is a personal one. It is a matter of corporate culture and if your company is willing to change. Many publications address the virtue of change management and similar topics, so this type of support should be easy to find. We do know that where companies have embraced paperless as a culture of the organization it has been beneficial. We also know that where proper planning and management were not utilized there was economic loss and the project was not successful.

Consider the following statistics.

- The number of pages consumed in U.S. offices is going up at a rate of 20% per year.
- It is estimated that 80% of information is still retained on paper even though more than 80% of the documents with which we work are already in a computer somewhere (CAP Venture Group).
- Organizations now maintain 30 times more data than in 1999 (Gartner).
- The U.S. annually spends $25-35B filing, storing, and retrieving paper (IDC).

Generating More Paper

- Typical office workers spend 40% of their time looking for information.
- Professionals spend over 500 hours annually reviewing and routing files and another 150 hours looking for incorrectly filed documents.
- Over 42 billion pages were faxed last year alone.
- The average document is copied 9 times (Gartner).

One study of office technology trends by CAP Venture Group states that there will be a continued trend toward digital equipment and toward sharing equipment in computer networks as well as growth in the transmission of information over combined voice and data networks. They also predict that wireless communication between PCs and peripherals will begin to make an impact. How quickly this occurs depends on a number of factors. The economy has caused many businesses to cut back or to fund only areas with the greatest need. The flip side is that legislation such as the Health Insurance Portability and Accountability Act (HIPAA) and Sarbanes-Oxley is actually increasing the requirements to maintain greater degrees of documentation and a complete audit trail of all accounting transactions. This seems to be increasing the cost of reporting. These costs help justify the investment to maintain digital document libraries.

The all-in-one machine is probably the most significant piece of office equipment sold today. This machine is a printer, scanner, copier, and fax all in one unit. It saves on space inside the office, you only buy one cartridge for it, and you can link it with whatever components you have in your office. It appeals to small businesses.

One place where the trend toward digital seems clearly entrenched is the modern law office. Traditionally a paper-heavy profession, lawyers seem to have the wherewithal and willingness to go digital. Evidence of this trend includes the existence of a web site devoted exclusively to the topic. According to survey data published by www.futurelawoffice.com, law firms will increasingly see technology as the key difference between themselves and their competitors.

Cost of Handling Paper
- 70% of time is spent processing paper.
- 90% of documents are paper.
- 7.5% of documents are lost.
- 15% of documents are misplaced.
- 30% of the work day is spent searching for hardcopy documents.
- 30% of documents contain obsolete information.
    - One four drawer file cabinet:
        - Holds 15K-20K pages
        - Costs $25,000 to fill
        - Costs $2,000 per year to maintain

How do you justify such a wide scale project in your office? We start by calculating the ROI of a proposal to go paperless or for proposing upgrades to servers, software, hardware, or anything else that has to do with your project. Typically, such a task seems daunting. Perhaps you want to measure the ROI of a change you made, and you're either lost at how to do it or overwhelmed at the time it will take to track and measure it.

It isn't always easy to put down and quantify on paper what you know in your head and in your heart: "Yes, it will have a positive impact on the bottom line." What happens if you've done the homework in the proposal stage, and you become accountable for it? How are you supposed to measure it? How much time should you invest in tracking every financial aspect of something just to say, "See? It was a good recommendation."

Some people pick up the gauntlet and proceed to propose a ROI and then attempt to track it while others choose to avoid the whole ROI thing. The reality is that if you expect management (those who hold the purse strings) to continue to invest in significant projects, IT needs to embrace the concept of ROI and learn how to measure it effectively. Let's start with a simple equation that every first year accounting student would understand.

- How much is it going to cost (initial investment and on-going costs)?
- How much money is it going to make?
- How much money is it going to save in the first year and every year after that?
- From here, figure the ROI. The formula is:

$Earnings + $Savings - $Cost)/$Cost X 100 = ROI %.

Cost of Mishandling Paper

According to INC Magazine:

- It costs $20 to file a document,
- Or $120 to search for a misfiled document, and, if you can't find it…
- It costs approximately $250 to recreate a lost document.

Let's extend this formula into cost justification and ROI for the purchase of a new computer. (Again, we are attempting to keep this simple to get the point across.) The cost of the new, appropriately equipped computer is $1,500. In this example, there is nothing wrong with your old computer; it simply isn't fast enough. Consequently, as part of the proposed ROI, we need to determine what is to be done with the old computer. In this example, the company sells it to someone for $500. Hence, the net cost of the new computer is $1,000. Now, you need to determine how much faster the new computer is. Yes, those processor speeds are wonderful guides, but we need to be realistic. If you double the processor speed, you don't double your productivity. Before you start your ROI calculation, stop and think about how often you've waited for the computer to finish processing something before you can proceed.

You might even keep a paper log beside you and record each instance, both the frequency and duration, for a period of time, perhaps during end-of-month or whenever your period of high demand is. This evidence-gathering technique will prove very valuable in supporting your analysis. After a few days, check your log and total the time and occurrences. Divide by the number of days you've run your log to come up with the daily nuisance factor. Now you know just how much of your time the existing computer is wasting. With this knowledge, you can quickly figure out how much it is costing your employer by taking the number of working days in a year and multiplying it by your hourly wage. For this example, suppose the old computer is costing you an average of two minutes 15 times a day for a total of 30 minutes a day. That is approximately 120 hours a year. If you're earning $15 hour, that amounts to an annual cost of $1,800 a year. Now, estimate how much time the new computer will save you. Realistically, you'll never be able to recoup all that time, but let's assume you can reclaim 50% of it, or $900 in the first year. In your proposal for the new computer, the boss will want to see a positive ROI, but if you only plug in your numbers for the first year, you'll get a negative ROI of (900 - (1500-500))/(1500-500)*100 = -10.0%.

However, remember that the new computer has a life expectancy of at least 2 to 4 years on your desk, and those savings continue into future years. Therefore, the real ROI in this case needs to cover the second year and so forth. With this in mind, show your boss a two year ROI projection of (900+900 - (1500-500))/(1500-500)*100 = 80.0%. Now, what boss in his right mind won't approve an expenditure that yields a return of 80% in just two years?

Thus, instead of dealing with emotions and words like, "I believe a new computer would help," or "I feel like this old machine is slowing me down," you have some cold, hard facts to support your case, and it is easier to accomplish things when the facts back you up!

Remember: this is a simple example, but it's enough to give you a good idea as to how to proceed, and, most importantly, why you need to take these steps.

A conservative estimate is that a targeted document management effort can return as much as $20.00- $40.00 for every dollar invested. That's pretty good by anyone's standard, and most of us would be happy with even two dollars for every one invested!

The reality is that the ROI can be measured for everything. Practicality dictates that you should only measure what you can effectively measure to the extent that getting a more detailed measurement is going to cost more than the potential savings.

When evaluating the cost of paper in your office, be realistic, but measure how paper is used. See what is stored and how the information is retrieved, if it is ever retrieved. Bring co-workers in on the project and measure the time spent looking for missing documents, re-creating documents, and filing documents. Evaluate lost worker time "traveling" to file rooms, printers, and copiers. Considering the many surveys which have been done on productivity, you should be able to substantiate your investment based on the facts.

Finally, there are several solutions for document management. Your plan should incorporate one or more of these. Often, one method does not solve all your problems. Consequently, you may need to create digital forms (scanning and imaging), but you also will need to manage your records. Today, most businesses find that they have a large percentage of the information already in the computer; they just need to manage the information better in the form in which it exists.

Information is recorded, stored, and distributed in four physical media types: paper, film, magnetic, and optical. Good data is available for the worldwide production of each storage medium, providing an upper boundary for the potential production of original information and copies. There are often good estimates for how much original content is produced in each of these different storage formats, particularly for the advanced economies that produce the most information.

Note: Details can be found at http://www.sims.berkeley.edu/research/projects/how-much-info-2003/execsum.htm#summary.

Why Paper?

With so many apparent benefits to going paperless,why is it, then, that if using digital media can reduce cost so drastically while improving productivity, people stay with paper? It could be because paper is

- Our comfort zone,
- Flexible,
- Easy to use, and
- Easy to compare documents
- Don't want to change the way they have always done it!

What about the next generation? How will the way students work with computers today affect how our offices operate in 5, 10, 20 years? Can you make the transition?

In *The Myth of the Paperless Office*, Abigail Sellen and co-author Richard Harper say that despite the fact that the paperless office has been heralded for more than 30 years, paper use has increased.

After studying the use of paper by individuals and organizations, they argue that paper will continue to play an important role in office life. After all, it is light, flexible, easy to use, and allows people to compare numerous pages at once, something that is extremely difficult with electronic documents.

In preparing this course, we found remarkably little about creating and managing digital documents or the impact of paper. Beyond the sources you would expect for such environmental issues as recycling and destruction of natural resources, there is little. The book previously referenced is one of the most current bodies of work found. However, before you decide you are too early, I should point out that this situation is changing. With more powerful machines, new database concepts, and changes in the way people work, we should see significant changes in the management of information over this decade. How we deal with information will change what we consider to be a document.

Simply stated, the benefits to going paperless are that it

- Triples processing capacity (Gartner),
- Increases productivity up to 50% (IDC),
- Creates immediate access to decision-critical data (which is the real goal), and
- Reduces storage space cost by up to 80%.

If all this does not work, there is still the very real issue of compliance with the ever-increasing legislature listed below regarding financial reporting that requires you to keep and to be able to readily access vast amounts of information:

- Sarbanes-Oxley,
- Regulations #302 & 404,
- DoD 5015.2 (records management standards),
- ISO 15489,
- HIPAA (health insurance),
- Gram Leach, and
- SEC.