KYOS Systems Inc.
20 Mall Road, Suite 200
Burlington, MA 01803
781-272-1401
www.kyos.net
contact@kyos.net

Operating in a Hybrid World: **Paper and Digital Documents**

Executive Summary

Today's organizations find themselves working with both paper and digital documents, operating in a hybrid environment that blends the ever growing volume of electronic information with the paper world. This blending of paper and electronic systems, which, while separately having their own benefits, together creates significant organizational complexity and costs. Many organizations remain too stymied to look for a rational solution that openly recognizes and addresses each. Either an 'all-or-none' digital approach is taken, with subsequent organizational disruption and increased IT costs, or a 'if it ain't broke, don't fix it' approach is opted for, which fails to lead the organization towards the benefits of digitized information.

Therefore, the core issue of how to effectively merge paper and electronic data to increase organizational efficiency, even while one may be transitioning to a more digital environment, remains unresolved. Until now, no effective solution for capturing the value of information from mixed sources, both paper and electronic, has emerged.

Advantages of Digital and Paper Systems

IT spending, in many businesses, is the one area where growth routinely exceeds overall organizational growth. Going digital brings scores of benefits, including secure archiving, disaster recovery and traceability that enhances security, compliance and on-demand information.

Despite opportunities to go digital, many industries continue to rely heavily on paper-based workflows. There are numerous reasons why. Paper can be quickly skimmed for information, it is relatively secure given the right controls on access, and paper forms are extremely easy to complete and to update; all it takes is a pen. Virtually anyone can use paper – there is no need for any special technical infrastructure for access – so it becomes an effective means of communication within and among organizations that are on different systems. Finally, with paper, there is a single durable, definitive source that users can always go back to as a reference point.

In organizations that use paper-based workflows, going digital can actually reduce productivity. Digitization involves losing access to paper archives and all of the information contained in those archives. Institutional knowledge disappears along with valuable organizational history and business intelligence. Getting to an all-digital environment can take years and typically involves armies of IT consultants, staff retraining and data re-entry. Once installed, processes have to change and people have to learn "the system."

Therefore, many organizations, especially those not formed in the last 5-10 years, continue to have legacy paper-based workflows. These include the insurance, financial services, healthcare, legal and

engineering verticals, just to name a few. Perhaps because paper-based workflows reside on critical paths to revenue generation or regulatory compliance, there is reluctance to embrace the typical 'all-or-nothing' digital solutions offered.

Technology ≠ Efficiency: From photocopying to document management

So what happens as we move forward? Increasingly complex and real time demands for information, compliance, and regulation increases the number of people and associated workflows that need to see the paper, i.e., access the data within the paper. Workflows evolve to cope with those needs, and with that, increasing investment in headcount just to track and manage the paper flow.

The technology solution began with the photocopier. One simply made copies for everyone that needed access to the data in the document. Simple, right? However, as organizations went increasingly global, and regulations and business practice demanded official copies of record, and the costs of photocopying, which were initially ad-hoc and variable, became increasingly large and fixed, this was no longer a viable central solution.

Enter scanning. Scanning had the potential to "scan once, use many times." It saves on paper and provides electronic access to authorized users. And therein lies the rub, how to electronically regulate that distribution and access? Why not invest in a document management system? And so we were off to the races in terms of added IT expenditures and increasing organizational complexity. This has been great for the document management industry, which having experienced tremendous growth, is now being consolidated through acquisition by… the database and storage industry.

All this has many organizations stymied. There is still the growing investment in electronic systems, coupled now with increasing infrastructure investments and expenditures to handle 'electronic paper,' the PDF. However, the core issue of how to effectively merge legacy paper and electronic data in order to affect greater organizational efficiency remains elusive.

A key stumbling block is the fact that in the minds of many the two worlds, paper and electronic, remain largely separate and distinct. Electronic data is often internally generated, and therefore, at least in theory, easier to manage. Paper often penetrates from outside. It may be the byproduct of an organization's ecosystem, i.e., its customers, vendors, and clients. As we all know, coordinating your neighbors to adopt a standard solution is like herding cats. There is no easy solution.

Yet given the importance of paper-based workflows to many organizations, it is surprising that a more cohesive solution has not yet emerged. Like photocopying, standard scanning becomes increasingly inefficient with volume, distribution, and complexity of informational demands. What happens when your organizational growth and reach creates millions, tens of millions, hundreds of millions, perhaps billions of images that now need to be accessible to be useful? How do you begin to search and successfully use the data within the document?

That is where document management systems came in to provide archiving, versioning and access control for large volumes of documents. And with document management came a major jump in added IT expenditures and increasing organizational complexity.

The problem is, even when effectively archived and controlled, none of the electronic structures around today, from document management systems to databases, provides an end user experience superior to the use of paper. Even when documents are stored electronically, users have to click through thumbnail images, making information sometimes harder to access than by flipping through paper files. The fatal flaw of these distinct worlds is that the end user workflow, despite the technology and investments, remains essentially the same; open a folder, flip through pages/images, visually interpret, validate, and

accept/reject that the page/image, based on whether it contains the data required, reiterate as necessary, then extract, translate, and use. Despite all the scanning, storage, and management activities upstream, nothing has been done to increase the downstream user's informational need productivity.

A Different Approach

But what if, as we mentioned in our *Document Data Management* whitepaper, instead of looking at the solution as one that takes a static object (the page) and converts it into another static object (the TIFF or PDF), we instead take a different view and look at documents and forms as temporary containers that provide data in context to a specific data gathering workflow? Such a view might urge us to look for ways to 'free the data from the paper' while retaining its context for future search and end users.

After all, the page itself is a kind of analog relational database that describes a set of data gathered for a specific purpose. What if we could convert it into an electronic relational database equivalent, one that would allow us to attach new and increasingly meaningful context as it became pertinent to informational workflows? What if we could then append business, security, and processing rules to the data?

We could then bring paper workflows a lot closer to digital workflows. We could make pages and documents a lot more findable since any page is defined and found by all the data contained within it. We could flow specific data elements into workflows on demand, streamlining the work and increasing data security and yet have direct links back to the original page source. We could build novel informational dashboards for business intelligence by combining data from different forms and documents through time; something impossible to accomplish with paper and PDFs. We could target selected data for recognition and conversion into ASCII text for direct flow into digital processes. If we could do all these things, we would indeed be building a robust bridge between paper and electronic based informational workflows.

Traversing the Hybrid World with KYOS TransFORM™: Getting Maximum Value from Paper and Electronic Information

KYOS TransFORM™:

- Makes pages and documents easy to find since any page is defined and retrieved by the data contained within it.
- Flows specific data elements into workflows on demand, streamlining the work and increasing data security.
- Builds novel informational dashboards for business intelligence by combining data from different forms and documents through time; something impossible to accomplish with paper and PDFs.
- Targets selected data for recognition and conversion into ASCII text for direct flow into digital processes.
- Ensures that there is just one original source document and one definitive information repository. Data from source documents can be infinitely re-used, but keeping the original intact ensures the integrity of organizational data.

This is what KYOS does. We help you live in a hybrid world. We combine workflow-centric thinking with award winning, industry-leading technology to help you streamline your paper-based informational workflows and obtain much greater organizational flexibility and efficiency. We help you make your paper-based data far more valuable, help you transition into a more digital and electronic records operating environment, and decrease the cost to your organization of that transition.

