AN INTRODUCTORY GUIDE TO INFORMATION ASSET MANAGEMENT

An important responsibility of any business is the management of its assets. These typically include equipment, inventory, human resources, real estate, natural resources, financial capital, and the like. The challenge of management is to acquire, utilize, protect, and optimize these assets for the maximum benefit of the business. File based electronic information, sometimes referred to as unstructured data, is also an asset and therefore, deserves the appropriate management attention.   Every manager eventually learns the hard way that mismanaging these assets has cost implications, productivity impacts, and often dire consequences for the staff and the business itself. Information assets probably have the biggest impact in the differentiation and long term survival of the company and yet are often the least managed of any of the company's assets. The reality is that today's computers are woefully inadequate and ill-equipped to support of such a crucial part of many businesses. Supporting the "piles of files" mentality is simply insufficient to meet today's changing business environment. What is needed is an Information Asset Management System that will provide the needed controls, functions and protections of those assets for the betterment of the business.

The Information Asset

The idea of an information asset is a powerful new concept that is designed to bridge the gap between how business views information and how computers manage files. The information asset is an entirely new perspective of data and is necessitated by the fact that business users intuitively include much more than just an individual file when referring to their information. Simple things like, what is actually in the file, who it is for, etc., is often confusingly and inconsistently encoded in the file name or implied by its directory location. Other information such as prior revisions, the template that was used to create the file, associated files such as pictures, scanned copies, or other working documents, not to mention the relevant emails, are simply scattered if recorded at all. As one customer put it, "We have more controls, tracking, documentation, rules, checks, and management oversight of our petty cash than we do over our information assets". The result of this is that computers are simply not designed to know what an information asset is, and therefore, are completely unable to manage it in any way.

To be clear, information assets are not simply the collection of files on a file server. The formal definition of an information asset is the set of all data, rules, and procedures that, collectively, represents a concept meaningful to the business.   This set of data can include not only a collection of files but other important items such as tracking and descriptive information (e.g. the name of the customer), audit logs, emails, supporting documentation, images, etc., that collectively, have meaning to the business. These can range from a few items to very complex asset that might include thousands of files.

This new concept is best explained by example.   Let's take the common business concept of a contract, a written agreement between two or more parties enforceable by law. While that's its definition, what actually constitutes a contact? Isn't it just that Word document? That seemingly simple question points out why today's computer systems are so unaware and unprepared to manage this type of asset from a business perspective.

An Example: The Composition Of A Contract

This type of asset, at least on the surface, appears to be pretty simple, probably manifesting itself as just an individual file. However, even a cursory analysis reveals there's a bit more to it. The table below defines some of the components that can make up a contract.

Possible Contract Components	
The Word document	The PDF version suitable to send to the client
The client name	Client contact information
The type of contract	The value of the contract
Template that was used to create the contract	The audit log of everything that happened to it
Previous versions of the contract	Rejected versions
List of people who need to approve it	The sales rep who created it
The costing spreadsheet used to create sections	Scanned signature page
List of people who have not yet approved it	List of people to be notified when approved
Proof that people actually approved it	Proof that the customer received the copy
A cryptographic signature to detect tampering	A mirrored copy for protection
A copy to put up on the website	Login of users who can access it via the website
Copies of important emails from the customer	Any related photos, sketches, or drawings
References to previous contracts	Customer account number
Validation script to run against the contract	How long people are given to approve or reject it

The table simply lists the many things that can make up the contract asset. When these items are put into action in the real world of business, the complexities get even more interesting. Often times, managing something is simply the ability to answer some basic questions about the asset. Where is it? Is it on the server, on someone's computer, on someone's laptop that is traveling right now, in some email message in my inbox? Which one of these 5 copies is the right one? Which one did we send to the customer? Did they ever get it? Who was supposed to approve it? What state is it in? Has it been signed yet?   Which template was used to create this? I have the PDF version, where is the real Word file? Who added this paragraph? Did anyone scan in the final signature page? Where did that go? What about that costing spreadsheet we used to derive the number? The list could continue but it should be painfully obvious that successful management of this information asset must encompass more than storing a file out on a file share someplace.

As can be seen from above, a contract is actually a quite complex entity. Anyone who has been involved in contract negotiations knows that problems related to managing just a single one of these assets can be costly often resulting in possible lost revenue, follow up opportunities put in jeopardy, employee productivity impacts, management stomach acid, and company reputation and brand impact. Contracts are just one example of the thousands of information assets that businesses struggle with every day.

What if Information Assets were money?

For a more satirical look at the problem, imagine if all the information assets in your company were actual money. In reality, this is somewhat true because it took money to generate these assets in the first place. So, how would you control your assets now? Would you simply let anyone delete or corrupt your assets?   Would you put all your money on a shelf and let anyone in the company "access" it? Would you let your people simply stuff it into their desks? Take them home? Move them up to some internet sharing site? Hand them off to a contractor? Clearly no business that is to survive would ever consider managing their financial assets this way. Why would you manage your information assets this way? Businesses cannot afford to mismanage information assets in such a way.

Information Asset Management

Writing a paper describing information asset management is like writing a single paper to describe financial asset management. Both are complex topics that can have books written about them. Thankfully just like financial asset management, there are a few fundamental concepts to information asset management that drive the rest of the complexity. Gaining even a basic understanding of just these initial concepts can go a long way in developing winning strategies for information asset management.

The Big 5

Action Information Systems has identified five fundamental categories common to all assets and vital to their successful management. These are the starting point for managers to identify and begin to control their assets. They are Naming, Composition, Workflow, People, and Access/Security.

Category	Description
Naming	What is it called?
Composition	What does it consist of?
Workflow	What can you do with it?
People	Who is involved?
Access/Security	How should it be protected?

Naming

Anyone who has ever tried to find a file in someone else's directory knows the naming problem. Just ensuring a consistently applied naming scheme for files and directories can be an enormous struggle yet is a critical unwritten requirement when sharing information. Including automated serial numbers or the name of the customer in the file name can help considerably. This often overlooked requirement is included first for a reason. Failing to get consensus as to the naming scheme has historically, made controlling the asset very difficult. The individual words chosen can also reflect the history and culture of the organization so selecting the correct names is often more than a trivial exercise.

Composition

As shown in the contract example above, an information asset can consist of many different items. Specifying the tracking information, sometimes referred to as metadata, is an important aspect of the asset. Metadata is very valuable when large numbers of assets are moving through the organization at the same time, or when an issue comes up and locating the information quickly can make a difference. Insuring that every contract has the name of the sales rep and the contact information of the customer seems obvious but can be very difficult to perfect in practice. Being able to keep the key emails from the customer authorizing certain changes or expenditures can save a significant grief later. The crucial concept is that all the necessary pieces of an asset can now be kept together and managed as a single item.

Workflow

In this case, workflow refers to what can be done with or to the asset. For example, can any employee simply edit the file or is there a more formal requirement for tracking revisions? Is there a rigid approval process that must be followed?   Workflow is more than just the normal computer supported functions but are, instead, focused on the needs to the asset itself. For example, contracts can be created, approved, signed, rejected, closed, etc.   Controlling the process is a great opportunity for staff productivity improvements and the way to ensure compliance.

People

The next category specifies the individuals involved in the process. Who can do what, who should do what, etc. Note that people involved in the asset can extend beyond the company's staff and can also include contractors, outside counsel, vendors, and even customers. Identifying who is involved, how they need to interact with the asset, and even the method of interaction, is an important part of the control of the asset.

Access/Security

This last of the big 5 defines the requirements for the stakeholders to be able to access and operate on the asset as well as protecting it from unauthorized access or corruption. With today's typical setups, just about anyone can "accidentally" delete or corrupt a key document, which may not be discovered until a much later date. Information security is a very complex topic in its own right and involves many additional technical aspects such as encryption, tamper detection and prevention, as well as disaster recovery.   However, the more advanced topics all start with the identification of the basic access and security requirements of the asset itself.

The categories, taken together, cover the fundamentals of information asset definition and controls. Note that in the real world, there are often other critical requirements that need to be considered. For example, there may be retention requirements for the asset so it can't be removed until some event occurs, or a validation step than needs to be performed.   However, these five categories are the foundation for all of these other requirements.

## The Container – The Collection Of Assets

Companies seldom manage only one asset. The next concept comes into play when dealing with a set of assets. Information asset management becomes even more challenging when it is necessary to manage multiple assets simultaneously. A collection of similar asset types is called a container. A container is

defined as a collection of information assets that collectively are controlled by the same set of rules meaningful to the business. For example, a container could include the active contracts, with another container holding the closed contracts, the rejected contracts, or all the email attachments. This provides a way to reference multiple assets as a set.

The Process

Finally, a collection of containers is called the process. This is the ultimate goal of an Information Management System. Continuing our contract example, we might have several different containers to manage contracts that are being created, those that are active, ones that are closed, and even those that have been rejected. The collection of these containers now constitutes our contract process.

The hierarchical relationship is shown in the diagram below.
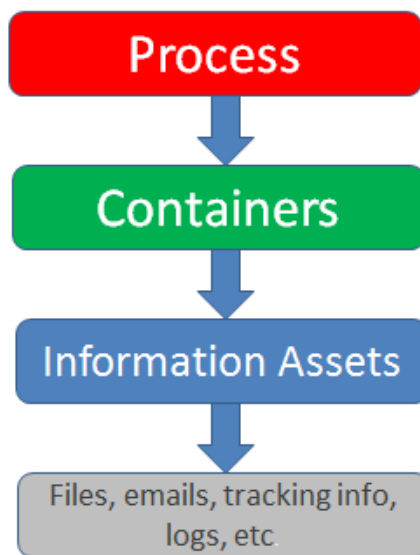
The benefits of managing information assets are the same as managing the other assets. Cost controls, operational effectiveness, risk mitigation, staff productivity, tracking, and compliance, to name just a few. However, the benefits go beyond the obvious. First, all the aspects of IT (storage, security, backup, just to name a few) can all be driven by the requirements of the information asset. Different assets can and will have different requirements. The requirements, such as the file's security settings, can even change as the asset progresses through its lifecycle. Thankfully, because the Asset Management System encompasses all the requirements of each asset, IT functions can then be automated, relieving IT from their typical one-size-fits-all strategy.

One of the most surprising benefits of an Information Asset Management System is the tremendous impact it has on storage management. Just about every feature or function of storage management from backup and disaster recovery to the more advanced features such as deduplication and information lifecycle management (ILM) are either much easier to implement, can be applied in the optimal way, become more powerful, or automated as part of the Asset Management System. Some functions currently impossible turn out to be rather trivial.

One example of enhanced storage management is that an Information Management System can maintain a copy or "mirror" of the important information. Unlike traditional mirroring, should the file become corrupted or deleted, the system can immediately restore the file from the mirror, logging who did it, and notifying an administrator. Such an obviously desirable feature is unfortunately, not available today at any price. Another example is the natural affiliation of asset management to the cloud. Some assets should be put into the cloud. Other should be encrypted before being sent anywhere. Others simply should never leave the building. Cloud storage can be viewed as analogous to a "bank" holding your valuables.[1] Only an Asset Management System that knows what the asset is, what its requirements are, and how it should be done can take advantage of the benefits of cloud storage while minimizing the risks. These are just two opportunities to take storage management to the next level of optimization, control, and capability.

At first glance, such an ambitious vision would seem to imply the need for extensive changes to just about every part of today's computer systems. However, such a system has been implemented and is currently serving customers. The product, called **Expedite**, the first true Information Asset Management System, was designed as a layer over the file systems and databases that implement the concepts of information assets, containers, and processes. No modifications were required to applications, the operating system, file systems, drivers, networking protocols, or storage.

Conclusion

Managing any type of asset can be a demanding job and Information Assets are not exception. Every company struggles because of the lack of capabilities of today's computers lack of even rudimentary support information assets, much less provide tools and techniques to manage them. Understanding the core requirements of an asset is just the beginning. Future white papers will cover other topics such as how to get started, best practices at converting a pile of files into controlled processes, how to handle real world situations, and practical guidelines to be successful at asset management. The explosion of information, the demands upon your business and the ever changing requirements demand a fresh approach for the very survival of your business.

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[1] Unlike a real bank, cloud storage is not backed by the FDIC to insure your assets!