

ECM Belongs in the Cloud

*A technical whitepaper
detailing the components
of effective Enterprise
Content Management
in the cloud*

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ECM Needs to Be in the Cloud

Enterprise content management (ECM) is the backbone of every modern information-driven organization. With companies generating massive volumes of sensitive and valuable content every day, maintaining a reliable repository and the appropriate tools to effectively store, manage, and classify that information is vital to the buoyancy of any organization.

Organizations have traditionally managed enterprise content from within their own data centers, but the advent of cloud computing has generated a surge in cloud-based ECM systems for organizations around the globe. Most business applications are moving to the cloud — most notably, with the expansion of remote work — and ECM software is no exception. According to 2021 data from Flexera, 99% of organizations use at least one public or private cloud service.

Maintaining legacy, on-premises ECM means tackling ongoing maintenance, costs, data security, and business continuity challenges. These challenges will only increase as legacy systems age. On the other hand, cloud-based solutions can help ease IT management, automate software updates, and easily integrate with other tools in a cloud-based ecosystem, all while ensuring future agility and scalability.

That said, many legacy ECM vendors have provided substandard cloud-based offerings to date, lacking the breadth of functionality enterprises require. Microsoft Azure is one cloud-based solution that acts as a private cloud. It can serve as a limitless repository for storing enterprise content and act as the foundation to house and power all ECM systems and business applications. Throughout this white paper, we will refer to Azure as our working example to better illustrate the power and benefits of cloud-based ECM.

What is Cloud ECM?

Cloud ECM provides an alternative way to manage not just content but also business processes. Like on-premises ECM equivalents, cloud ECM is a way to store your data and content in digital format. However, with cloud computing, tools and data are accessed directly from the cloud, while legacy systems store data on physical servers, usually owned by the end-user organization. The “cloud” component is the actual set of networks, hardware, software, services, storage, and interfaces that connect computing to service. Cloud services include the distribution of infrastructure, software, and resources on the web, based on customer demand.

Cloud computing helps organizations reduce the burden of network management, software installation, server maintenance, and on-premises application management. From a financial perspective, companies benefit from lower start-up costs, faster expansion, reduced capital investment, lower total cost of ownership, and reduced maintenance fees. Not to mention, organizations no longer lose sleep about the security and maintenance of their physical storage or the data within it.

Microsoft Azure is one of the eminent cloud-based platforms on which to house ECM in the cloud, offering a breadth of features such as compliance, security scanning, monitoring, alerting, and cost management. It helps organizations optimize business processes and enforce security and governance. Cloud adoption continues to accelerate among organizations globally. Azure has become a significant force in this industry-wide evolution, with more than 95% of Fortune 500 companies using Microsoft Azure to consolidate their information into one cloud-based system.

Benefits of Cloud-Based ECM

Modern organizations are increasingly leveraging the cloud to manage some or all of their enterprise content and business applications. Content is king in today's digital age, which means effectively managing that content brings undeniable competitive value. Storing documents on-premises was essentially the only viable option until recently. The emergence of new cloud-based systems and repositories offers the potential to simplify and scale ECM processes to new heights.

With Cloud Enterprise Content Management, or Cloud ECM, organizations can now manage content online. This new and evolving capability has grown significantly in recent years and continues to do so. According to a report by MarketsandMarkets, Cloud ECM is projected to grow into a \$34 billion industry by 2022, indicating that the technology is set to continue on its current upward trajectory.

Below we detail nine of the key benefits of adopting a cloud-based ECM solution like Azure.



Implementation Agility

Cloud-based ECM lets you get up and running quickly by removing the burden of collecting, configuring, and managing networks, servers, software, and storage. With fast deployment speeds, organizations can implement content management instances within just a few hours using no-code or low-code configurations of previously complex content services. Eliminating the physical burden of supporting CPUs, Disk Storage, Electrical and Cooling infrastructure — which previously added months to any business expansion or change project — this newfound agility helps organizations reach their business goals considerably faster.



Remote Access and Productivity

In today's remote work environment, the ability to access content securely from any device is essential to employee productivity. Cloud-based ECM allows users to access enterprise information anytime, anywhere, and from any device without the need for a VPN or other access mechanisms. In addition, cloud-based ECM solutions are optimized to provide quick response times when accessing data and content from anywhere in the world.

According to an IFEP survey, only 19% of businesses feel their employees have a high level of awareness about important content due to the limitations of accessing ECM content. Cloud ECM offers a centralized view of all enterprise content, allowing users to locate information and collaborate more effectively.

Authorized users can receive and send documents whenever and wherever requested, making sharing and accessing content easier, thereby increasing productivity. In addition, where companies once struggled to scale user access to an expanded user network, cloud vendors make it easy to share content with third parties in a secure way without providing network access or an additional level of login security.



Compliance

Ensuring that legacy content and records stored on-premises satisfies strict, evolving regulatory compliance requirements is both challenging and costly for all types of organizations. Most industries are regulated differently according to local geographical and international country boundaries, and for some companies that do business internationally, country-specific regulation dictates that information assets must be stored within those countries.

Cloud-based ECM vendors offer data centers across many geographies so that businesses can secure sensitive information in accordance with local laws. This is especially important for companies with business practices in Europe because they must comply with various jurisdictional laws under the European General Data Protection Regulation or GDPR. This is just one example of recent data regulation policies with stipulations based on location requiring content-specific controls by geography.



Security

While some organizations may be skeptical about storing important or sensitive corporate documents in the cloud, most cloud-based ECM solutions offer more security than on-site document management systems. Advanced cloud technology offers improved firewalls, better encryptions, and tools such as blockchain that help ensure cloud documents and information are stored safely. When it comes to redundancy and maintaining data integrity, cloud services are well-equipped with massive networks of geographically dispersed data centers.



Data Sovereignty

With some platforms, data sovereignty — or the actual physical location of where data is stored — is absolute and includes direct ownership. However, newly emerging and increasingly stringent data sovereignty requirements can be more effectively managed with a cloud-based content management system that can enforce rules based on geographical location. Thus, the migration of content on and off the cloud can be driven by business rules and requirements, without the burden of direct costs for those movements.

SECURITY IN AZURE

*To date, Microsoft has invested over one BILLION US Dollars in research and development around security and compliance. Protection of the Azure platform is delivered at a software level and across physical data centers, infrastructure, and operations, with human experts actively monitoring assets and data. This deep focus on security is critical to many looking to finally move their ECM capabilities to the cloud, as security is often the number one concern with the move. To anyone with that concern today, we ask the genuine question, **“Do you really think your internal security is better than that provided by Microsoft?”***

DATA OWNERSHIP IN AZURE

*Many SaaS-based content service platforms manage data for you — which is fantastic until you come to leave. At that point, some vendors charge you for the ability to access that data and export it. **With Azure, you own your data and can do anything you want with it as a result.** This capability, combined with the advanced data sovereignty coverage, means that your organization has absolute control, visibility, and governance of its data.*



Reduced Capital Expenditures

Cloud-based ECM offers customer-based subscription model licensing on a per month basis, while on-premises vendors are typically licensed by quantity based on user volumes. The former includes annual maintenance and hosting fees, and subsequent costs are considered capital expenditures that the company can depreciate over time.

Cloud-based models are the way to go for companies looking for a customized usage model based on business needs and customer use cases. As for API access models, you can easily manage costs by using a combination of direct access, mobile, and API delivery models.



Automatic Updates and Reduced Maintenance

As with many other cloud-based solutions, implementing a cloud ECM system can greatly reduce business costs. Maintaining an on-site ECM solution is very expensive due to both upfront installation of hardware and software components topped with accumulating maintenance fees. By moving everything to the cloud, businesses do not have to worry about maintaining the physical hardware or software required to access and manage content, eliminating costs and freeing up IT resources for more productive and innovative tasks.

The cloud ECM vendor handles all software and hardware updates, backups, patches, and other tasks. Hence, organizations benefit from regular, automatic updates to the latest system versions without impacting business.



On-Demand Scale and Scope

Modern work culture is increasingly remote, especially since the COVID-19 pandemic — users need fast access to any content, anywhere, from any device. That means being able to scale quickly. It is an incredible competitive advantage for organizations to be able to manage application accessibility and performance via a system that can scale and adapt on demand. Cloud service platforms (CSPs) don't need human intervention, or 3-year capacity plans to scale to the evolving needs of the business. Constantly changing demands in magnitude and frequency can be easily met with the right combination of SaaS (Software as a Service) services.



Business Continuity

To provide business sustainability, companies must create resilient environments that can recover quickly from backups or switch to alternative data centers. These business continuity policies create challenges to the organization in terms of cost, public resources, and business-acceptable time management for access to any business-critical content.

Cloud-based ECM solutions can help sustain business continuity by ensuring that all organizational content is appropriately maintained and accessible when needed, without an impending risk of system failure or data loss, no matter the situation. With cloud-based ECM, knowledge workers can stay focused on their work and seamlessly deliver even during a crisis situation such as COVID-19.

Microsoft Azure provides regional replication of data storage services to provide additional layers of performance and built-in failover and disaster recovery. Redundancy is a significant benefit of cloud-based ECM.



Integration

The market for add-on cloud services around ECM is large and includes cloud-based tools for scanning, optical character recognition, and AI-driven tagging and classification. However, integration to other systems, such as ERP and CRM systems, is an area that ECM has struggled with over the years. The same goes for seemingly simple things like integrations to Microsoft Outlook and Office tools that many of us use daily, along with connections to the new essential remote-working tools such as Teams.

Integrating on-premises ECM platforms with cloud services is complex, limited by network capability and traditional software integration techniques that require a lot of effort. At the same time, businesses of all industries need access to cloud-based tools and services to remain competitive in today's landscape.

Adopting a cloud-based ECM system allows for simple integration (typically via REST-API) with other cloud-based services like MS Office 365 and includes vital security protocols like identity management, zero trust access, and automated security provisioning. The integration of cloud-based ECM with security and access protocols and directory services can make life easier and information safer for organizations.

AZURE-BASED INTEGRATION

Azure provides deep integration to all Microsoft solutions, from SharePoint to SQL Server to Office 365, offering the engine to fuel all ECM activity. Information needs to be readily accessed and shared with real-time collaboration capabilities. This capability is critical when considering a cloud platform for ECM. Information cannot live in silos in the modern business environment — it needs to be accessed, shared, viewed, and commented on.

These interactions do not happen in the document management system but in the other tools and applications that users spend their day in — such as Outlook and Teams. The integrated nature of Azure with these tools makes that interaction seamless.

In addition, the integrated nature of cloud services like Azure help reduce the need for additional change management support when transitioning to a cloud-based model.

Key Features of Cloud ECM

As we've seen, migrating your enterprise content management to the cloud comes with important benefits: overall costs go down, processes speed up, and governance becomes much easier. That said, moving high volumes of content should not be taken lightly. You'll want to take a careful, calculated approach both in your choice of ECM system as well as in the planning and preparation phases prior to embarking on a cloud-based ECM migration.

To identify the best-fit ECM solutions, organizations need to start by defining clear business and technical requirements that an ECM must meet. They should then evaluate each seller against those requirements. Some of these requirements may include:

- Ease of use and configuration
- Ability to integrate with the existing stack, or main tools of the organization
- Built-in compliance and control management
- Supports a wide range of information asset types, especially storage-hungry assets such as image, video, and audio
- Built-in usage and performance analytics
- Ability to scale
- A complete product roadmap to future-proof your investment

Here are some of the key features that you should consider to identify the best cloud-based ECM fit for your business.



Centralized Repository

A centralized repository, or at minimum, a common repository for all your ECM needs, is a foremost criterion. Many cloud-based ECM systems offer a single repository for all your content and data, making sharing content between business groups a powerful reality. This single repository facilitates the searching, finding, and mining of data across business processes, with the opportunity to reveal patterns and productivity not easily seen in typical siloed solutions.



Dynamic and Flexible User Experience (UX)

A self-service content portal can facilitate secure access for internal and external users. In fact, some SaaS products are designed with the assumption that organizations will build their own independent, purpose-based user interface (UI) tailored to what the business or the user needs. Some cloud ECM products are based on this idea, meaning their consumption and pricing models only include API access. This concept, known as "headless ECM," is a much longer discussion, but this type of model is worth considering for organizations that can't seem to find a complete ECM solution that responds to their unique UI needs.



Digitization of Manual Paper Processes

Much of the real world still relies on paper documents, and many organizations' archives remain locked somewhere in a filing cabinet. However, a recent surge of modern, SaaS-based intelligent solutions, including Optical Character Recognition (OCR) and Machine Learning (ML), can help streamline the transition from paper to digital.

Cloud-based capture solutions, for example, can enrich business processes in a multitude of ways with features like:

- Image and logo recognition
- Extraction of overall and line-item details from invoices
- Sentiment analysis from correspondence, emails, and chat messages
- Geo-tagging
- Direct integration of extracted data to ERP and CRM systems
- Intelligent use of RPA and AI to process incoming content and data quickly, efficiently, and intelligently based on the content itself

The marriage between capture and ECM, or intelligent document processing, is not a single provider game — don't be afraid to consider mixing and matching services. Providers that may offer strong capture capabilities don't necessarily offer the best core ECM functionality, so it's essential to understand what your business needs and how individual solutions can merge to serve those needs.



Email Management

Managing unstructured content like email is an important factor to consider when choosing a cloud-based ECM system. Emails are documents too and can contain critical information for records management or eDiscovery processes. Therefore, you'll want to select a solution that incorporates effective email management and the ability to easily store and manage email attachments, along with the necessary support for email-based processes in the cloud.



Mobile-First

One of the key advantages of SaaS ECM applications is that they remove traditional barriers to accessing content from non-Windows devices. The support for iOS, Android, Chromebooks, and macOS using various browsers, with minimal need for customer extensions, has revolutionized SaaS ECM. Mobile device usage also delivers enterprise-class document control and business workflows to the limited access areas of the business, such as deskless warehouse floors and production lines. In addition, IoT devices directly contribute to business processes and enable advanced technologies like Robotic Process Automation (RPA). With advanced mobile ECM capability, mobile users can become active participants in teaching and training AI/ML tools with document data.



Integrated Analytics

As your organization's unstructured data continues to explode, insights become more critical than ever. You need to know what information you have, who is using it, how it can be more beneficial to those who need it, and what content can be eliminated to reduce risk and storage costs.

Data lakes are already being looked at as opportunities for advanced Artificial Intelligence (AI) and ML tools to enrich traditional ECM analytics with intelligence that reveals sentiment values, relationship proximities, and patterns that were not previously perceived with basic capabilities. These advanced analytics can help support business decisions and advanced automation, assist with risk evaluation, and reduce human error or inconsistencies. Exploring ECM solutions with the potential to integrate these advanced capabilities can help your organization remain competitive and better respond to operational challenges that were once difficult to address using conventional data warehousing technologies.



Business System Integration

A repository is only as good as the tools it integrates with. For modern organizations, ECM can no longer just sit alongside other business systems. It must be integrated into other line-of-business software and applications to truly deliver benefit to the organization. The open nature of cloud services enables application developers and IT departments to connect the organization's business tools and applications, creating seamlessly integrated experiences for end-users and simplified management for technical staff.

A powerful cloud-based ECM system should offer deep integration to key business tools and systems, including CRM tools, ERP solutions, and collaboration platforms so that all types of content — structured or unstructured — can be traced and managed throughout their lifecycle. Deep integration also can lead the way to enhanced workflow and productivity. For instance, with transactional content (such as orders and invoices) that comes into the organization, data can be automatically extracted, classified, and entered into multiple systems at once, eliminating the need for repetitive manual data entry and potential errors.

Integration to other systems has been a struggle for traditional ECM solutions. Integrating with core systems like CRM systems, the corporate website, and HR systems often require custom coding, and connectivity between ECM systems until recently is unheard of.

However, as you might expect, Microsoft Azure provides deep integration to all of these and other Microsoft solutions in your environment, such as SharePoint, SQL Server, and Windows itself. Integration into core business systems needs to be seamless, allowing users to work from whichever system they feel most comfortable in and whichever makes most sense for their current task. Azure enables this via deep integrations to deliver a seamless user experience across business applications. Connectivity and consistency is achieved at a data and API level, enabling all core systems to connect to third party tools such as KnowledgeLake and expand the collective level of governance, usability, and intelligence across the business.



Information Governance

Whether on-premises or in the cloud, organizations are required to meet records retention and preservation policies, along with information governance and compliance rules. While moving to the cloud does not exempt your organization from these obligations, the dynamic nature of cloud content services offers a more modern approach to the classification and categorization of content and records.

The advent of new laws like GDPR and CCPA, which mandate specific data controls and disposition and disposal audit requirements based on jurisdiction, have made data privacy matters increasingly complex. Microsoft Azure has an incredible amount of features and functions available to aid organizations in enforcing controls and policies, including GDPR, Fedramp, Fisma, HITECH, and HIPAA for protecting customer information.

An effective cloud-based ECM solution should be accompanied by intelligent information protection capabilities, and ideally, the ability to automate content classification based on specific metadata. Finding a solution that integrates effective records management functionalities and data governance will simplify your organization's everyday retention and disposition of records.

Four Steps to Move Your ECM to the Cloud

Migrating your legacy ECM content to a cloud-based environment requires technical expertise and focus, but above all, it requires a plan. The migration process should be business-led. Identifying and deploying a cloud-based ECM solution requires first establishing a clear understanding of future business requirements and mapping the movement of content to meet those needs.

Here are just a few of the questions you'll want to consider in the planning phase of your ECM migration to the cloud:

- How much content do I have?
- How many systems contain that content?
- How much duplicate content do I have?
- What are the most and least used systems?
- Where is my sensitive and risky content — such as content that contains PII?
- Where are my records and are they being managed properly?

The list goes on, but those questions must be answered at an enterprise level. Monitor the current usage of systems and the flow of content from one system to another to expose internal workflows and processes you didn't even know you had. Overall, you should be trying to:

Identify where data risk exists (for example, PII data)

Define which systems are most valuable to the business

Clarify which systems are most used by the business

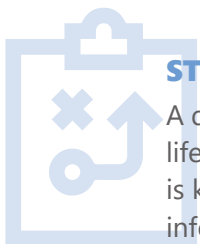
Identify which systems can be retired or migrated

Make content more accessible, improving search efficiency



STEP ONE Audit Existing Content and Processes

Identifying precisely what content exists in the source system is a critical planning component before moving content to the cloud. Identifying content that can be archived or deleted can alter (and simplify) the entire project's scope if it means leaving behind significant amounts of obsolete content. Organizations also should conduct a thorough audit of their existing content infrastructure, which includes establishing a clear overview of file types and metadata from each system to prepare for metadata mapping. This will help to anticipate any desired changes to file classification and tagging schemes. Organizations must ultimately build those changes into the new cloud-based ECM solution before changing existing data assets.



STEP TWO Develop a Change Management Plan

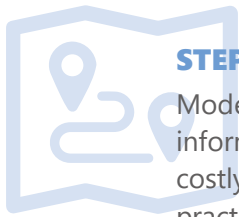
A disciplined change management process will help you manage the migration by controlling the lifecycle of all changes, with minimum disruption to both the business and IT. Communication is key. For users to successfully and seamlessly adopt the new ECM solution, they must be informed well upstream of the initiative, timelines, and the long-term benefits of the migration project. Business leaders need to make sure customers and end-users are adequately trained before executing the migration. As for user adoption, choosing an intuitive solution with a user-friendly interface can help ensure high user adherence across the organization.



STEP THREE Map ECM Content Lifecycles and Workflows

Data assets have a life cycle — meaning they can be created, modified, stored for a certain period, and then archived or deleted. Understanding these flows — and who is responsible for the integrity, accuracy, and retention period of information assets — will inform the migration team of the role of each business stakeholder in the migration of different assets.

The mapping phase provides the link to the destination system, creating item-by-item mappings from source to destination. The creation of schema mappings streamlines the process and can inform administrative tasks, such as syncing users, groups, and role mappings between systems.



STEP FOUR Create a Practical Roadmap, Look for a Partner

Modern organizations maintain hundreds of thousands of information assets. Migrations can be resource-intensive and costly for companies, so having a framework based on proven best practices can help mitigate risks. For example, organizations lacking sufficient resources to conduct a complete one-stop migration should first focus on high-priority information assets. Working with experienced and trusted partners to establish a clear migration roadmap helps solidify the iterative process to move all data assets and users of those data assets to the new, cloud-based ECM system.

For more detailed information on legacy modernization and content migration strategies, take a look at our ECM Modernization eBook.

Conclusions

As companies strive to advance their digital transformation and streamline information management, it's important first to develop a strategy for the effective selection, deployment, and management of content management tools and systems. Cloud-based ECM platforms such as Azure enable organizations to overcome the challenges of traditional ECM software solutions, including high maintenance and development costs, security risks, and administrative complexity around things like data privacy and information governance.

The evolution of cloud platforms into a sustainable, secure, enterprise-class solution means that companies can now effectively run many ECM applications across the organization without adding new software, hardware, or services. That said, as with any major IT deployment, there are no hard and fast rules governing cloud-based implementations. With ECM, as with any business system or application, moving to the cloud is the ultimate lesson in looking before you leap. Before taking the plunge of migrating legacy content to the cloud, you must take a step back, take inventory of your existing content and systems, and make a clear decision based on the unique requirements of your organization.

About KnowledgeLake

KnowledgeLake is a cloud-native intelligent document processing platform that helps companies and organizations capture, process, and manage their most important documents. KnowledgeLake's end-to-end content services solution leverages AI, machine learning, and robotic process automation (RPA) to extract and classify data within documents and automate the flow of that data to the right systems and applications. Two million users worldwide use KnowledgeLake to work faster and more efficiently.

