ECM TECHNOLOGY VALUE MATRIX 2018

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THE BOTTOM LINE

Traditional old-style enterprise content management (ECM) was an inflexible product designed purely for document storage and simple retrieval. Today, modern ECM includes advanced technologies such as artificial intelligence (AI) and machine learning (ML) that automate business processes, improve data capture and classification, provide contextual search capabilities, and deliver information governance. The Nucleus Research ECM Technology Value Matrix 2018 reflects advances made this past year, evaluating vendors for functionality, usability, and the value that a vendor's solution brings to the client.

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OVERVIEW

While preparing the 2018 ECM Technology Value Matrix, Nucleus found that the influence of AI and ML are changing the landscape of the industry and have become a standard expectation of clients. Since last year, vendors have continued the "digitization journey to the cloud", but with a much stronger user-centric focus. Functionality continues to improve and remains the primary driver of value to businesses, but vendors recognized that the end-user experience needed to match the technological advances with greater usability (Nucleus Research, *r59 – Understanding the Value Matrix*, April 2017).

MARKET TRENDS

Those vendors with a clear roadmap for improving the user experience, process automation, seamless integrations, and robust security are differentiating themselves in the market. In 2017, the ECM mantra was "digitization and moving to the cloud." 2018 continues along the same trajectory, but with a greater focus on the user experience. Customers expect solutions that are flexible and agile, and that can solve evolving needs while adding value to their business. Some trends identified since the last Value Matrix are:

- Data migration will become obsolete in the next five years: File migration is the traditional method of reaching data for editing, storage, collaboration, and integration with other business processes. However, file migrations can be time-consuming and inefficient. They can also test the data storage limits of an enterprise. Metadata is a data set that gives information about other data. It is a resource for data discovery, content classification, and contextual search, enabling users to access information more easily. Repository-agnostic access is the ability of a solution to manage content from any database, regardless of location. Uniting metadata with repository-agnosticism allows the user to work with data and content at its source, eliminating the need for costly and time-consuming data migrations.

- Automation and robotics: AI and ML advances for process and workflow automation will impact return on investment (ROI) with greater productivity, increased efficiency, and improved risk management due to the reduction of human errors. Although automation is not a new concept, the exponential growth of data combined with technological advances such as Robotic Process Automation (RPA) are growing in acceptance, driving additional value to the client.

- The hybrid solution is back: Vendors remain committed to digitization and cloud services but have recognized the value of a phased transition with solutions that function both on-premise and in the cloud. Although newer vendors tend to offer cloud solutions, vendors were having difficulty transitioning existing users from on-premise to the cloud. In addition to the challenge of change-management issues, some users have a significant investment in hardware that would be difficult to justify dismantling, while others have regulatory requirements for data geolocation and storage. Consequently, more vendors are offering hybrid solutions as a transitional option for clients as they work on moving to the cloud.

ECM VALUE MATRIX
March 2018

NUCLEUS RESEARCH

FACILITATOR — LEADER

Micro Focus

DocuWare

OpenText Content Suite

SER Group

Egnyte

SpringCM

iManage

Comarch

OpenText Documentum

Laserfiche

M-Files

Box

Nuxeo

Digitech Systems

Microsoft

Fabasoft

Hyland

IBM

Alfresco

Epicor DocStar

Greater Usability △

Better Functionality ▷

CORE PROVIDER — EXPERT

The Value Matrix is an assessment of the state of the market and indicates the functionality and usability of a solution. An arrow indicates future movement of a solution relative to others. Solutions without an arrow are projected to keep pace with the increase in functionality and usability expected in the overall market.

EVALUATION CRITERIA

Nucleus Research focuses on evaluating usability and functionality, two characteristics that indicate an application's ability to deliver both ROI and value over time. The Value Matrix results reflect the ability of a solution to fulfill business needs efficiently and easily.

A vendor's placement in the Value Matrix is based on functionality and usability as determined from interviews Nucleus analysts had with end-users through ongoing research and inquiries. Through these conversations, analysts gathered data on the

solution a customer selected and how it fulfilled the technology needs of the enterprise. Usability evaluation includes the efficacy of the user-interface, training time to proficiency, mobile access, and impact on user productivity. Functionality is evaluated based on the breadth and depth of what the core application can do and its suitability for its intended purpose. For example, Nucleus looks beyond the core functionality to such features as collaboration, integrations, automation, robotics, and AI to determine value to the business user.

LEADERS

Leaders in the Value Matrix include Box, Digitech Systems, Laserfiche, Microsoft, M-Files, and Nuxeo.

BOX

Box offers a single platform solution that provides cloud content management, collaboration, business processing, security, and regulatory compliance. The solution provides a full range of functionality and focuses on providing an intuitive end-user experience that can be tailored to the specific needs of a client. Box has a strong partner network including IBM, Microsoft, Adobe, AWS, DocuSign, and Salesforce that enables it to provide additional functionality to end-users.

Box provides many pre-built integrations that connect its platform to third-party applications, allowing end-users to bring outside content into Box. An application programming interface (API) layer surrounding the platform also empowers users to build custom integrations with other applications. The solution provides workflow management through integrations with Nintex, Pega, and IBM Case Manager. Box Relay lets end-users create custom, automated workflows.

Box Skills, announced in October 2017, applies third-party ML technology to content stored in Box and enables end-users to extract meaning from unstructured content. With Box Skills, for example, imported audio is automatically transcribed, and images are automatically keyword-tagged with text transcription. Facial recognition with transcription can then be applied to videos. Box Skills is a framework for applying AI and ML to content to help users extract insight from unstructured content and accelerate business processes.

Box also has pre-built solutions for data protection and compliance. In February 2018, Box announced the General Data Protection Regulation (GDPR) Data Processing Addendum, a self-service solution for GDPR compliance that gives end-users an electronically executable document for auditors that proves their data is compliant with GDPR. In addition to regulatory compliance for GDPR, Box also

provides compliance for HIPAA, FINRA FedRAMP, and GxP. Box Zones, an in-region data storage solution, allows compliance for organizations with data residency regulations, which control where the data resides. Information governance capabilities are delivered with Box Governance, where retention policies, classification, eDiscovery, and legal holds help manage corporate risk. Also, Box KeySafe allows organizations to own their content encryption keys for ultimate privacy protection.

Customers report that Box has very strong security; as one customer said, "We need to share data in a very secure manner, and Box provides us with the tools to do that. They provide the granularity of controls that is needed by enterprise organizations. Our implementation of Box Governance pretty much takes care of the whole gamut from compliance to eDiscovery and retention." Users reported that Box is functional with any browser, is a reliable cloud-based solution, and has solid collaborative capabilities. Users also reported that Box's business ECM cloud solution is efficient, with unlimited storage and virtually no ramp-up time to value. Usability was noted to be the strongest factor supporting positive reviews from users, followed closely by scalability, collaboration, and flexibility. However, customers said that Box's functionality did not always support some of the more complicated features of other legacy platforms.

This past year has been a transition for Box into the complex ECM market. End-users interviewed were almost unanimous in their praise for Box's innovation and commitment to further platform development, rating the Box support teams as well prepared and willing to spend whatever time necessary to resolve an issue. Box plans to expand on the size and scope of the ecosystem using AI to enhance auto-classification, categorization, records management, and development of a "threat detection" capability for increased security and data protection. As Box continues to develop functionality, Nucleus believes it will be a notable ECM provider.

DIGITECH SYSTEMS

Digitech Systems offers a full suite of software and cloud services that provides an end-to-end system of automated data capture, content management and collaboration, secure content storage, and automated business processes. The solution enables users to efficiently capture information as it enters a business and then to automate the flow of that information through their business. As a result, users can access insights at the right time to make informed business decisions. Digitech distinguishes itself from other vendors because it uses proprietary AI algorithms. Digitech's patented AI software builds a multi-dimensional profile of all captured content, and ML continually increases the accuracy of the system.

Digitech provides advanced capture capabilities. Its technology can capture information from more than 250 file types, including e-mail. Digitech has an intuitive point-and-click UI that enables end-users to customize their data capture process. Once captured, the Digitech search function gives direct access to data at the user's point of need, with contextual and relevant key-word inquiry. Additionally, users can organize the information, store it securely, and automate the distribution of that information.

The software suite provides end-users with robust business process automation. Digitech offers numerous business automation solutions that work in all business environments. For example, financial services companies use Digitech's invoice capture and accounts payable processes. Additionally, healthcare providers use Digitech for automatic processing of medical claims, invoices, and order forms. These are just two examples of the many ways that Digitech helps automate business processes.

Digitech's growth has been entirely organic. As a result, its software suite integrates seamlessly. Digitech plans to continue a strategy of organic growth moving forward. Consistent with market trends, Digitech also offers a hybrid option for users with specific regulatory requirements or who are working on transitioning to the cloud.

Digitech solutions are sold and serviced through value added resellers (VARs). Through contact with VARs, Nucleus was able to interview a group of clients, primarily in the healthcare sector, to discuss usability, functionality, and business value of the applications. Clients cited ease of deployment; strong security, governance, and GDPR compliance; robust business process management (BPM) functionality; and reliable customer support as strengths of the platform. Clients were emphatic that the VAR model delivered the best support for their software needs with frequent updates and support. However, several users were not aware that Digitech Systems was the vendor providing their ECM platform, assuming that the VAR made the best selection, on their behalf.

Digitech continues to invest in the development of its solution. It continues to offer enhanced product launches such as ImageSilo. It is also moving to object-based storage, which will eliminate the need to identify a file structure to locate a specific document or information. Digitech is unique in that it owns its proprietary capture and storage process, having these capabilities from the ground up. With ongoing product development, strong usability, robust functionality, and a loyal user base, Digitech may be one of the strongest vendors that most end-users have never heard of.

LASERFICHE

Laserfiche offers highly usable, industry-specific solutions for content management and BPM for mid-size to enterprise customers. Laserfiche automates processes for banking and lending, wealth management, supply chain management, healthcare, K-12 and higher education, justice systems, and state, local, and federal governments. Laserfiche has flexible licensing options that include deployment solutions for on-premise, hybrid, private cloud and SaaS. In addition, the Laserfiche Cloud bundles in Laserfiche Forms, Records Management, encryption at rest, and Business Process Library (BPL) with every new Laserfiche software purchase at no additional cost.

The vendor's industry-specific solutions in its BPL are developed organically with its user community and global resellers. In government, for example, Laserfiche Workflow reduces costs, enables transparency, and streamlines processes for Freedom of Information Act requests. In financial services, Laserfiche Forms automates task management for banks, credit unions, insurance companies, and wealth management firms with scalable solutions. In education, the Laserfiche process automation suite modernizes campus operations and streamlines communications with students, faculty, and staff. For business processing and supply chain management, Laserfiche enables users to automate invoice and accounts payable processing. With Laserfiche's healthcare workflow automation, users can link insurance information and lab reports to electronic medical records and streamline bills and claims processing. Additionally, Laserfiche's justice systems solution allows officers to access records on mobile and search full texts of witness statements and depositions. These are just a few examples of the many processes that Laserfiche's BPL can automate.

For GDPR and compliance, Laserfiche helps customers facilitate data subject requests, classify and manage personally identifiable information (PII), enforce access controls, and apply retention policies. Laserfiche Records Management Edition is certified according to the DoD 5015.2-STD version 3 standard.

Laserfiche's recent release of version 10.3 provides location-based document searches on mobile, improved collaborative tools, and additional back-end integration capabilities. New reporting and analytics upgrades also enable users to develop more flexible reports to visualize and interpret data trends and use advanced analytics to determine next steps.

Laserfiche end-users are loyal and enthusiastic. Nucleus interviewed clients at the recent Empower conference and reached out to additional users after the meeting. The responses were consistent, citing Laserfiche's high functionality, ease of use,

innovative offerings, and responsiveness to user-defined needs. Several clients also mentioned that they found the solution to be scalable, regardless of the amount of growth of the enterprise, and that licensing is both flexible and understandable. Clients noted that new features are usually "bug-free," and that automatic cloud updates are seamless. Many of the users surveyed are mid-sized operations with focuses on municipal and government services, financial wealth management, or higher education.

Laserfiche has a clear, client-centric roadmap as an overall content management eco-system. Records management, security, compliance, and task and process automation are the focus for the near future. AI and ML are featured components in the roadmap, which leverages these technologies to deliver a comprehensive suite of services. Some of the newer features include geolocation and business rules. Robotic Process Automation (RPA) is also in the pipeline to reduce daily, repetitive manual tasks through rule-based automation.

MICROSOFT

Microsoft's ECM suite solution includes Office 365 and SharePoint. The products offer robust functionality, integrate seamlessly with other Microsoft products, and are scalable for the enterprise. They also provide end-users with a centralized location in which to access content. Office 365 and SharePoint provide functionality for document management, collaboration, and automated workflows. Users can access content from other applications, create custom forms, work on files at the same time, and securely share content externally. Microsoft provides advanced enterprise-grade security, compliance, and governance through the Microsoft Security and Compliance Center. End-users can use Microsoft to conduct a GDPR readiness assessment.

In 2017, Microsoft announced a new SharePoint Migration Tool that will facilitate the movement of content to SharePoint Online or Office 365. In 2017, Microsoft also announced improvements to secure external sharing and Office 365 Advanced Threat Protection.

Microsoft Office 365 and SharePoint users interviewed were unanimous in their praise for Microsoft's file sharing and collaborative capabilities. Also noted as a strength by end-users are its data discovery and search capabilities, which together lead to actionable insights. Nucleus heard that Office 365 and SharePoint are easy to configure and customize, can support basic workflows, and seamlessly integrate with all Microsoft products. Several users mentioned that they liked the solution's version controls and scalability. Users also noted that Office 365 and SharePoint are

best suited for existing Microsoft clients and that the use of the larger Microsoft platform is necessary to achieve the full benefits of the product.

Microsoft is well known for its frequent updates, and most users are familiar with the process. Upcoming plans for content services include predictive indexing and queries with AI, file move function to allow users to move content between SharePoint and OneDrive, and continued automation for approvals and publishing.

M-FILES

M-Files has made a name for itself with its intelligent information management approach, most recently enhanced with the M-Files 2018 release which added the Intelligent Metadata Layer (IML). The IML creates an open architecture platform that is system-neutral, allowing seamless connections to other business systems and content repositories without the need to migrate data (Nucleus Research s28 – *M-Files 2018 intelligent metadata*, January 2018).

M-Files enables end-users to tag documents and non-document objects with metadata and then categorize and process information based on what it is, not where it is. Content can be tagged with almost any information important for understanding it in a business context, including case, claim, asset, contact, employee, and so on. M-Files uses AI to facilitate document classifications by giving metadata tag suggestions to end-users. Users can also automatically restrict access permissions on content by tagging content according to its associated customer and project. Once tagged, users can search through information using various metadata tags and manage information in multiple ways based on metadata. As a result, the same information can be accessed and used differently by different users or groups based on context, without duplication.

M-Files also allows end-users to tag content stored in other systems without migrating that content to M-Files, enabling users to search for and work with data where it is while preventing a lengthy and costly content migration process. As a result, end-users can easily find and use content and other information in context. Because of its unique approach, M-Files can help companies who have siloed data environments. M-Files is system neutral, and as such, it can connect with data no matter where it is – whether it's in SharePoint, OneDrive, Box, OnBase, FileNet, OpenText, Documentum, Salesforce, or somewhere else. The architecture contains an open back-end where M-Files or third parties can develop connectors to other systems and then search and manage documents and other information within those systems.

In 2017, M-Files acquired AI provider Apprento to incorporate natural language understanding (NLU) and natural language processing (NLP) technologies to automatically suggest and define metadata to put content in context and increase productivity, facilitate faster access to data, and improve the solution's ability to process unstructured content. M-Files is integrating AI technology to add further context related to customers, roles, projects, contributions, perspectives, and action items through a knowledge graph. M-Files also released M-Files GDPR in 2017, providing tools that enable end-users to manage and protect the personal data of EU-based customers and prospects. In February 2018, M-Files announced a partnership with FileFacets, a data discovery and enterprise analytics company that develops data connectivity and migration technology. The partnership will further enhance M-Files' functionality for data discovery, content searching across networks, and connectivity with external systems.

M-Files users rated robust functionality and ease of use as the top features of the product. Several mentioned their satisfaction with M-Files logical structure, intuitive interface, and ease of deployment. All respondents said that elimination of the need for content migration and the ability to work with files, regardless of location, is a powerful tool not offered elsewhere. Users also noted that configurations were simple and rarely required IT for completion. Clients also said that they like the ability to self-define rules and policies for permissions management that are automatically applied across the platform. Searching by context, or the "what" versus traditional "where" searches, are more efficient and accurate.

M-Files plans to continue to develop additional automation, launch new features more quickly, enhance its portals, and provide more frequent cloud updates.

NUXEO

Nuxeo is one of the newest vendors in the market but has established a strong market presence. Nuxeo is cloud-native, but it can also be deployed on-premise and in hybrid environments. One of the primary problems Nuxeo seeks to address is the issue of siloed content and data because most companies have multiple content repositories. Nuxeo addresses this problem by providing a platform that enables end-users to access and work with content from all different repositories through plugins to other ECM solutions and to business applications such as Salesforce. The content from other repositories can be accessed in Nuxeo, enabling end-users to work with this content even as it stays where it is. This functionality also prevents the need for costly and time-consuming data migrations.

Nuxeo provides a robust and complete metadata-focused content management approach that utilizes AI and ML. The solution uses metadata to discover content

and perform analytics. Nuxeo also provides unique capabilities when it comes to managing rich content and media, such as the ability to automatically storyboard video.

In July 2017, Nuxeo announced the release of a new Web user interface (UI) that enhanced the user experience with capabilities for full customization. A September 2017 partnership with Simflofy further enhanced Nuxeo's ability to connect with content from different repositories including legacy ECM systems, business and productivity apps, cloud storage, and enterprise file sync and share (EFSS) solutions. Nuxeo plans to release a line of fully productized SaaS applications to address specific business use cases including vertical templates for financial services, insurance companies, and government. These applications will include processes for digital asset management, case management, and knowledge management.

Nuxeo clients are almost evangelical in their support of the platform. Nucleus interviewed end-users to assess the usability and functionality of this vendor's platform and received a lot of positive feedback. Comments included praise for the cloud-native, open-source architecture; Elasticsearch full-text search engine; and contextual content management. Several users noted the ease of configuration and deployment, as well as the ability to manage content in-place with advanced metadata tools. Other responses include a solid collaborative experience, use of the ECM Wizard for step-by-step customizations, and the platform's ability to manage large data files such as videos. However, several clients said that Nuxeo is not a platform for unsophisticated technical users.

Nuxeo is committed to client-centric service and advances in usability. It plans to continue making improvements to the customer experience with additional usability features, AI enhancements to increase actionable insights, and the use of microservice architecture to design applications as suites of independently deployable services. Additionally, Nuxeo continues to develop partnerships to support platform offerings. Its growth strategy is aggressive, and it plans to be a global ECM standard in the next three to five years.

EXPERTS

Experts in the Value Matrix include Alfresco, Epicor DocStar, Hyland, Fabasoft, and IBM.

ALFRESCO

Alfresco provides a single-platform approach to managing content, digital business processes, and governance through the Alfresco Digital Business Platform.

Customers can also purchase the Content Services and Process Services components of the solution separately. Additionally, Alfresco offers functionality for AI, analytics, integrations, and an open API Application Development Framework that allows for integrations with other business intelligence and visualization tools. Alfresco provides metadata capabilities that allow for intelligent searching. The vendor focuses on a cloud-centric strategy, though it also provides on-premise, hybrid, and managed solutions.

The solution is based on an open-source platform that is highly customizable. New customers often choose Alfresco to replace legacy on-premise solutions with Alfresco's cloud-native, modular, and open solution because end-users can easily build out functionality and integrations to suit specific needs.

Alfresco offers governance functionality that includes records, discovery, compliance, classification, retention, and access control. Though Alfresco does not provide a packaged GDPR solution, it helps end-users with GDPR compliance through functionality that enables the automatic identification of GDPR-related metadata, security controls, control over how GDPR data is acquired and governed throughout its lifecycle, and the managing of GDPR operations and reporting.

In February 2018, Thomas H. Lee Partners, L.P. (THL) announced that it would acquire Alfresco Software. THL is a private equity firm that invests in middle market growth companies in the financial services, consumer and retail, healthcare, and technology industries.

Users said that in general, Alfresco is a robust and flexible open-source solution with a large variety of APIs that serve the enterprise market well. It remains an advanced solution attractive to well-versed technical buyers and developers. Comments were consistently positive about scalability for growing businesses and the ease with which users can build workflows. Users reported that the records management function offers heavy-duty access control and policy compliance, which is especially important to those companies with strict compliance requirements. Users said that in lieu of comprehensive or easy-to-use documentation, the strong user community provides a significant amount of support. Users also said that the UI could be confusing at times and likely needs updating. Another issue reported was licensing pricing confusion; some users noting that it was difficult to pin down the exact costs to expect, but that Alfresco was proactive in resolving this uncertainty when approached by the prospective user.

Like other ECM vendors, Alfresco is committed to digital transformation, leveraging technology to improve performance and agility. The Alfresco roadmap is the development of a single, modular platform for digital business including content

management, business processing, and governance with modern open architecture. Alfresco is working to improve usability and visualizations, and is also working to reduce time to value with custom-focused applications. Additionally, the use of common components for both content and process applications will foster an open ecosystem. Developing partnerships are becoming more important, an example being Alfresco Quick Start on AWS, an ECM configuration that is adaptable for multiple scenarios with out-of-the-box deployments.

EPICOR DOCSTAR

DocStar offers ECM and BPM with strong core functionality and prebuilt integrations. Since being acquired by Epicor in January 2017, DocStar has extended its integration portfolio to include Epicor ERP solutions. DocStar recently improved the usability of its forms, enhanced its capture process, improved its search capabilities, and expanded its automated workflow functionality including the addition of an end-to-end case management tool. DocStar has also leveraged the Epicor capabilities in areas such as business analytics and mobile platforms.

DocStar focuses on empowering its customers to build and maintain their workflow processes. The solution has an easy-to-use, drag-and-drop UI that is intuitive, particularly for its Forms Designer and Workflow Engine Design Tool. Security and compliance features are available through permission settings to access documents, inboxes, folders, workflows, and retention policies; however, the security permissions are not packaged into governance solutions like those of some competing vendors.

DocStar users report ease of use as the greatest strength of the platform. They also noted that document capture and workflow capabilities are fast, simple, and efficient. The availability of standardized templates was cited as a positive attribute. On-premise clients who have not updated to the latest version of DocStar report that it is time-consuming to search through folders.

DocStar is committed to the Epicor "cloud first" strategy but continues to be available for on-premise implementations as well. DocStar has plans to offer e-signatures capability, enhanced contract management, Sales Order Automation, and further expansions of its capture technology in 2018.

FABASOFT

Fabasoft is based in Austria and offers ECM and BPM to large enterprise customers primarily located in Europe. The Fabasoft Cloud Platform provides capabilities for modeling, project management, test automation, encryption, and big data search. Specifically, the platform delivers functionality for automated workflow processes

including digital personnel file management, contract management, digital asset management, board communications, collaboration, process management, and compliance management. Fabasoft also provides vertical solutions tailored to manufacturing, healthcare, financial institutions, and the public sector.

As a European company, Fabasoft provides comprehensive GDPR compliance. Fabasoft's EU-GDPR Toolbox is a ready-to-use solution within the Fabasoft Cloud capable of managing processing activities including risk assessment, templates for incident reporting, rights of data subjects, and integration of external persons such as data protection officers into the process. Fabasoft – in combination with Mindbreeze InSpire – offers AI for document scanning that can be trained to automatically capture information and independently initiate workflows.

Fabasoft releases updates for the Fabasoft Cloud every two months. Some recent release features included: BPMN 2.0 editor for users to execute processes either at the same time or in succession, intelligent process controlling via customizable dashboards, new options for creating user-defined forms, and a form inbox to capture and categorize digital assets via HTML to store in the Fabasoft Cloud.

Users gave a consistent picture of a product that is intuitive with an easy-to-use interface. Another feature noted is the quality of its security and compliance, and several users said they appreciated the value of the Microsoft Office integration for their business processing. Nucleus heard from users that document retrieval is simple, and that user training and the quality of vendor support exceeded expectations. Fabasoft was described as flexible and straight-forward to deploy, with robust functionality. One customer said, "When we want a certain feature, we tell Fabasoft and, within a few weeks, we have the new feature. They are open to development and, they find a solution for everything."

Fabasoft recognized that its focus on improving usability in 2017 needed to pivot back to functionality and is preparing for the future using AI and machine learning for intelligent document scanning, management, and indexing. E-mail inbox management is available for unstructured documents. Fabasoft continues to invest in expanding the functionality of the systems to improve client models and offerings.

HYLAND

OnBase by Hyland provides an approach to document management that focuses on managing content, processes, and cases within purpose-built applications that address vertical-specific needs, while still providing a centralized hub of information that any user can access via their primary line of business application. Hyland

provides particularly robust solutions for financial services, insurance, government, higher education, and healthcare.

The OnBase platform offers solutions for invoice processing, contract lifecycle management, and HR services. Hyland also offers extensive integrations to connect with other business applications. Additionally, Hyland provides an intuitive user experience. WorkView | Case Manager lets administrators build data driven applications and workflows with native, low-code configuration tools.

With OnBase 17, Hyland released an updated UI to both its Unity and Web clients and improved SSO. It made incremental updates to Unity Forms which allow for no-code electronic forms development and the Esri Integration which provides geospatial mapping and location analytics. OnBase also integrates with the Microsoft Office Online Server, allowing end-users to view and edit Word documents in OnBase without Office locally installed. In July 2017, Hyland acquired the Perceptive business unit of Lexmark International, Inc., which includes, but is not limited to, Perceptive Content and Brainware Intelligent Capture. Following the acquisition, Hyland released a newly combined suite of Hyland Healthcare products for content and image management including Acuo VNA, PACSgear, and NilRead. In February 2018, Hyland announced that it will acquire the OneContent business from Allscripts and plans to continue support while enhancing the platform that provides healthcare content management.

Users report that OnBase offers full-depth of functionality including content analytics, broad integrations, and a good UI. Several customers commented that they were satisfied with the "any device...anywhere" account access and felt that OnBase is a client-centric value proposition. One customer said, "With other vendors, you need to hire an army of developers to suit the product to your needs. Hyland gives you out-of-the-box, point-and-click configuration. So even someone who doesn't have a background in ECM can quickly become a master." Another customer said, "The best thing about it is that anytime someone comes to me with a problem, I can figure out a way to fix it within the OnBase solution. We have saved the organization quite a bit of money because we haven't needed to buy additional software – we can do a lot with what we already have today." However, OnBase users offered mixed opinions regarding usability. Cloud-based users reported good experiences with integrations and deployments, whereas on-premise clients said that they experienced a steep learning curve to achieve proficiency.

OnBase plans to continue its road-map for developing and enhancing application-centric solutions and process automation and workflow technology. OnBase has committed significant financial resources to accomplish these goals, including

improved usability, configurable reporting dashboards, capture with Brainware by Hyland, case management, and e-signature functionality. OnBase is actively modernizing its entire platform and expanding its content services offerings.

IBM

IBM offers a full range of content management and workflow automation solutions available in the cloud, on-premise, or as a hybrid option. IBM's solution provides advanced cognitive capture, can access content from almost any other repository, provides end-users with edit-in-place functionality, and uses AI and ML to automate workflow processes. Customers can purchase ECM and BPM capabilities separately and scale these products as their business needs grow.

IBM's go-ahead strategy focuses on intelligent workflow automation across the enterprise, facilitated by its content management services. The IBM Digital Business Automation (DBA) Platform, released in January 2018, brings IBM's content management services together with advanced workflow automation capabilities. IBM's DBA Platform provides data capture, tasks, content, workflow, and decisions at its core, with operational intelligence, machine learning, and governance underlying the platform. It provides analytics and modeling capabilities unified through a Navigator user interface. The platform automates business processes and delivers intelligent recommendations to end-users wherever it is possible to do so to help businesses become more efficient, reduce costs, improve overall transparency, and provide personalized self-service capabilities to customers. Key use cases for the platform include: loan origination and servicing, policy underwriting and claims processing, regulatory and compliance management, patient care management, customer service, benefits and eligibility management, customer and employee onboarding, transportation, and logistics management, fraud & risk management, and trade finance. IBM's partner network also provides an avenue for end-users to extend functionality.

IBM offers an extensive content management portfolio, the foundation of which is made up of Content Navigator, FileNet, and Datacap. At the core of all these content services are advanced document capture, metadata tagging, advanced search, and collaboration capabilities, with ML, NLP, and analytics capabilities throughout the platform. These content services seamlessly integrate with the DBA Platform to facilitate efficient workflows. IBM's Content Navigator enables end-users to search, preview, access, and edit content in-place from almost any on-premise or cloud repository and has an extensible framework so that users do not have to migrate content. In the past year, IBM has made user experience updates to Content Navigator and integrated Content Navigator with Office 365. The new FileNet Cloud Storage 5.5 was released in December 2017, and provides end-users

with the ability to store and collaborate on content. Datacap has multichannel capture capabilities, extracting document content for automatic classifications with the appropriate metadata. IBM's newest release, Datacap 9.1.3, enhances the tool's high-speed scanning, bulk document processing, and NLP capabilities, with a connector to Watson visual recognition. Meanwhile, Datacap Insight Edition provides cognitive capture capabilities enhanced by ML, NLP, and advanced imaging classification.

Nucleus interviewed on-premise and cloud end-users of IBM's content management solutions and received consistent feedback: IBM is a stable, reliable ECM and BPM platform that provides additional benefits when used with the extensive range of other IBM offerings. Clients described it as robust, reliable, and efficient. Several users said that it is a complex product best suited to a sophisticated enterprise user base. As reported on the 2017 ECM Value Matrix, the suite of content management services is powerful but requires the support of technical expertise to configure and modify. Several end-users reported that the user interface was not among the most modern and would benefit from additional updating.

IBM is an established company with multiple offerings and a considerable legacy user base. IBM remains ahead of the curve of relative to other legacy vendors in its movement to the cloud. Its content management solutions support complex processes across enterprise operations and address almost every imaginable need a corporation can define. Though the size of an on-premise IBM deployment can be a deterrent for organizations who do not have a significant amount of time or resources to devote to such a project, the IBM Cloud offerings have increased in popularity amongst customers who do not want to make a big upfront investment. Nucleus expects that the IBM DBA Platform initiative will have a positive impact on the ECM space. Robotics and work-flow automation should address the universal problem of repetitive and time-consuming manual ECM tasks. Roll-outs of additional automation and straight-thru-processing across an enterprise are planned for 2018 and are expected to have a positive impact on the customer experience with an end-to-end work-flow solution. Enhancements that should affect ECM include cognitive capture, low-code modifications, operational intelligence, and the end-to-end cloud solution.

FACILITATORS

Facilitators in the Value Matrix include DocuWare, Egnyte, Micro Focus, OpenText Content Suite, and SER Group.

DOCUWARE

DocuWare has a strong presence among mid-market companies in the United States, Germany, and France with sustained growth of on-premise customers and accelerated growth in cloud-based customers. It also sees success in departmental deployments in large enterprises. The solution offers strong out-of-the-box functionality for document management and workflow automation without the heaviness of the largest legacy ECM vendors. DocuWare competes with smaller and more local ECM cloud players but often wins deals because of its global presence and its high usability due to an intuitive drag-and-drop UI.

In 2017, DocuWare released Version 6.12, which offers improvements to data collection security, the speed of workflow processes, support for hybrid environments, and improved integrations to existing on-premise systems including SAP.

End-users of DocuWare consistently said that out-of-the-box functionality and easy deployment are the strongest features of the application. One customer said, "It's perfect for us. It's a cloud system, which is very important, and the pricing, service, and quality we get relative to other vendors is extraordinary. We are able to change things by ourselves without an IT department." Additional comments included short time to value with rapid deployments and short learning curve, with several clients stating that they spent less than one month from the beginning of data preparation to departmental deployment. Several end-users said that the "start-to-finish" support system was valuable through the entire process and promoted high levels of satisfied user adoption. Increased productivity and efficiency due to streamlined workflows were also noted as positive attributes of the application. A few users noted difficulties with browser compatibility, but VAR support was able to resolve this issue.

DocuWare is committed to a zero-interruption policy to eliminate operational downtime and maintain stability. The company plans to enhance usability in 2018 with pre-configured solutions and templates, in response to client feedback. Strong security features with document and communication encryption support regulatory and records policy compliance. Workflow automation improvements will continue as part of the roadmap DocuWare has identified for the future.

EGNYTE

Egnyte has significantly enhanced its offering in the past year, transforming from a primarily EFSS solution to a full ECM solution with BPM functionality, AI and ML, GDPR compliance, and strategic partnerships. Recent additions to functionality such as custom search ability with metadata, simplified cloud migration, enhanced

security, and strategic partnerships place Egnyte firmly in the content management arena. Egnyte has customers around the world and serves a substantial number of large enterprise customers.

The solution offers a unified platform with functionality for a single content repository with unified control over information, content collaboration (both internally and externally), and a single view for compliance management. Egnyte also provides services for content migration and content lifecycle management. Egnyte Protect offers strong governance to end-users by helping customers understand sensitive and PII content and exposure across all cloud and on-premise repositories. For GDPR protection, Egnyte's solution covers PII data across all 28 EU member states and can recognize patterns in all 24 major languages. It then enables end-users to establish processes and training across the organization to establish an auditable process.

Egnyte users are consistent in their support of the application, reporting that strong security is a priority for their business and Egnyte is their vendor of choice. Additionally, ease of use and collaborative capabilities are also noted as strengths. Users said that the Egnyte cloud offers an efficient method of transferring and sharing files regardless of size. Clients also liked that Egnyte offers password and expiry protection for shared and private files, allowing for greater control over data. Another common theme reported was ease of use and good user support.

Egnyte plans to continue its progression to full-service ECM with a unified platform for comprehensive content management. Offering on-premise, hybrid, and cloud deployments with on-going infrastructure modernization and content-centric solutions, Egnyte is a progressive company with the potential for greater market penetration.

MICRO FOCUS

Micro Focus Content Manager is a governance-based application designed for highly regulated enterprise businesses. Its unified solution supports a wide variety of content types and can meet regulatory and governance mandates for many jurisdictions worldwide. Micro Focus provides an approach known as Secure Content Management (SCM), which focuses on a data management strategy that takes a proactive approach to managing risk and protecting information through a broad and integrated portfolio that secures and governs information. The SCM approach is holistic and focuses on controlling data, keeping data secure, data archiving, file analysis, intelligent classification, and the interconnectivity between file analysis, structured data archiving, and content management. Advanced analytics throughout the system provides automated classification and policy enforcement.

Micro Focus's approach focuses on risk management by understanding information, integrating information tightly, and using analytics to understand that information in order to prepare for security threats and act when something does happen.

The SCM Suite includes three products. Control Point provides end-users with the ability to access, analyze, and classify unstructured information. Structured Data Manager provides end-users with the ability to access, analyze, and classify structured information. With the latest release of SDM, version 7.5, clients can now encrypt sensitive data in place or in the archive using Format Preserving Encryption (FPE). Content Manager provides a repository to manage all this information throughout the product lifecycle. Advanced analytics and governance capabilities underlie all three components.

In September 2017, Micro Focus announced a spin-merger with HPE software (Nucleus Research *r187 – Micro Focus after the spin-merger*, October 2017). The transaction consisted of the spin-off of HPE's IT management, big data, and security lines with a subsequent merger into Micro Focus. Customers have since reported that there has been minimal to no disruption in HPE service, and SCM has reported the highest renewal rates currently across all Micro Focus products. Nucleus interviewed former HPE Content Manager end-users to assess usability and functionality. Respondents liked its automated document classifications, GDPR Starter Kit (Nucleus Research – *HPE announces GDPR Starter Kit* – May 2017), and easy integration with the Microsoft Office 365 platform. Security and governance controls were noted as valuable functions that support an enterprises' global account relationships, protecting PII. Geolocation functionality aligns content, contacts, geographical data, and policy in a single application and is considered by users to be a valuable tool. Prior unease voiced by clients about disruptions from the spin-merger have disappeared, and none of the users interviewed mentioned any concerns.

Micro Focus continues its core strategy of information governance using AI to extend automation and reduce error rates occurring with a manual task. In addition to content management, Micro Focus creates business value with improved productivity and reduced IT costs.

OPENTEXT CONTENT SUITE

OpenText provides ECM and BPM to a broad market of customers, many of whom are large enterprise companies. The OpenText Content Suite features robust out-of-the-box functionality and features a modern and intuitive UI in a drag-and-drop format. Business processes offered include accounts payable, human resources, asset management, and records management. The functionality of the product

extends to information management, business networks, analytics, customer communications management, and eDiscovery. The solution also offers strong capabilities for governance, regulatory compliance, and security. Additionally, OpenText Magellan provides AI-based predictive analytics that combines open source machine learning with advanced analytic capabilities and business intelligence.

OpenText delivers value to customers in industries that work with tightly regulated content. The company works with its customers to understand and streamline business processes while keeping company information secure throughout these processes. For example, OpenText products provide organizations with the functionality they need to be compliant with privacy regulations such as GDPR. OpenText emphasizes that GDPR compliance starts with organizations having a deep understanding of the information they possess.

OpenText ECM clients responded to Nucleus interviews citing a solid end-user experience. Specifically mentioned are ease of customization, collaboration, and auditing functions. Several noted that OpenText ECM is a good choice for non-technical users because of its intuitive interface and good vendor support. Clients referred to its stable platform, expected functionality, and business value due to increased productivity and efficiency. Another benefit noted is the wide variety of easily integrated OpenText offerings to meet all the business' needs. A few users noted some difficulties with deployments but stated that that the problems were due to inexperienced consultants, rather than a product issue. These clients suggested using an experienced third-party partner for those businesses without strong technical expertise.

Since the last Value Matrix, OpenText announced the OpenText Release 16 Enhancement Pack 3 in November 2017, which provides improved analytics and AI with OpenText Magellan, an improved UI, additional third-party integrations, and enhancements for GDPR compliance. In February 2018, OpenText announced its acquisition of Hightail, Inc., a cloud EFSS solution with customers around the world.

OpenText continues to expand beyond the ECM market, offering solutions for many business requirements while adding investments in analytics, internet of things (IoT), case management, and cloud services. OpenText plans to grow via the acquisition of businesses that support digital transformation and process automation. The organization is planning to enhance content analytics for data blending and develop admin tools to make configurations easier. Deep learning image analysis, forensic threat detection, high volume data management, and

hybrid offerings are all a part of the OpenText strategy. OpenText remains a leader in the ECM market, a position supported by user feedback.

SER GROUP

The SER Group offers ECM and BPM on a single platform to customers around the world. The SER Group is headquartered in Germany, and although most of its customers are in Europe, it is expanding its North American presence through its extensive partner network. Moreover, SER has its own sales representatives in Eastern Europe, Russia, and APAC. The vendor offers robust and scalable out-of-the-box functionality that allows for fast implementation, easy customization, and quick onboarding. The solution provides integrations to legacy systems so that users can access content from existing on-premise and cloud systems.

The vendor offers Doxis4, service-oriented architecture (SOA) with a substantial number of on-premise users. Doxis4 also runs in the cloud or on a hybrid platform. It provides ECM and BPM on a unified platform, all of which have been developed organically by the vendor. Customers can purchase the solution as a full stack or select modular parts of it. The metadata-focused platform allows for content analytics. The solution also provides out-of-the-box case management tools with ready-to-use business solution templates for wholesale and retail, engineering companies, financial services institutions, insurance companies, hospitals, life sciences companies, M&A data rooms, federal authorities, and pension funds. Specific business processes include HR records management, accounts payable, quality management, claims management and mitigation, call center and ticket system solutions, contract management, and patient records management. End-users can invite others to access their document repository with limited permissions. The SER Group has many customers in regulated industries and provides strong governance capabilities, particularly for GDPR, FDA compliance, and government solutions.

Nucleus interviewed some users and consistently heard that they were very satisfied with the modular components and pre-defined solution templates for various use cases and industries. They reported that deployments were efficient and quick, delivering projects in the expected time scope. Users also said that the technology met their internal needs and was easily customizable for specific use cases. Additionally, clients noted that the SER Group provided strong support throughout the deployment process. Customers also value SER Group's internally developed cubeDesigner, which enables end-users to customize their deployment as needed in-house, without the need for code.

SER Group has a limited North American presence, but plans to change this over the next few years. The company's value proposition is ECM and BPM on the same platform so that it is scalable, flexible, and evolutionary. SER Group is committed to the "design and build" philosophy rather than "buy and integrate" strategy, creating a unified metadata platform with advanced functionality. SER is leveraging AI and ML to promote digitization and task automation. The philosophy of "fulfilling customer needs" will play well as SER enters the North American market.

CORE PROVIDERS

Core Providers in the Value Matrix include Comarch, iManage, OpenText Documentum, and SpringCM.

COMARCH

Comarch's solution focuses on document management, data exchange, and business process automation. Headquartered in Krakow, Poland, Comarch has 25 years of experience and has thousands of employees in offices around the world. Its customer base includes international enterprise companies in many countries worldwide. Most customers are in Europe, though it is currently expanding its North American presence. Comarch targets companies in the financial services, retail, manufacturing, healthcare, telecommunications, airline, insurance, and business service centers industries. The solution is offered on-premise, in the public loud, and in private clouds through the vendor's data centers in Poland, Germany, Luxembourg, France, Russia, the United States, Canada, China, Malaysia, and Singapore.

Comarch offers an ECM solution that addresses a full range of content management needs, including document capture, optical character recognition (OCR), workflow, records, lifecycle, and archiving. It also provides capabilities for master data management and business to business data exchange. Its content management services serve as the base for its packaged workflow automation solutions, including solutions for accounts payable, accounts receivable, e-invoicing, procure-to-pay, and contract management. These solutions are designed for and offered to specific verticals including retail, manufacturing, healthcare, banking, and insurance. Comarch also allows for integrations with a variety of ERP, CRM, and HR platforms.

As a European company, Comarch offers robust capabilities for GDPR compliance, with a security approach centered on encryption, permission setting, and checks on data.

The end-users interviewed equally represented on-premise and cloud deployments. Clients said that the pre-packaged vertical solutions were easy to deploy and did not require additional modifications. Specifically noted were manufacturing, healthcare, and finance. The user experience reported satisfaction with the Comarch ECM platform, citing good usability and knowledgeable user support that is promptly responsive to all issues. Some Comarch clients interviewed referred to it as a more "traditional" content service provider, though they were not aware of its roadmap for the next year. One customer said, "Most of our workflow processes are done in Comarch ECM, and we are expanding on new modules and new ideas" and said that with Comarch, their company has been able to cut the time spent on some workflow processes by 95%, while reducing paper use by 85%.

Comarch is focused on a strategy of organic growth. Comarch is concentrating on research and development for the near future to broaden capabilities as it expands into the North American market. As a Europe-based company, security and compliance are key strengths for the company. Comarch has a clear roadmap and long-term strategy to add functionality and business services to its current offerings. Comarch is committed to research and development in its promise to expand functionality. Nucleus sees Comarch as a solid core vendor with the potential to grow in the North American market.

IMANAGE

iManage is a vertical specialist with a platform optimized for the legal industry, accounting firms, financial services, and professional services with the iManage Work 10 suite. Its solution offers core document management, records management, and document-centric collaboration capabilities. It has identified "content" as the core work product of law firms, accounting firms, financial institutions, and professional services. iManage provides artificial intelligence and an easy-to-navigate UI that enables users to classify content, extract information, and identify relationships between content through a knowledge graph. As such, the goal of iManage is to enable users to "shop for content" as easily as one shops on Amazon. Additionally, iManage Share provides secure external file sharing and collaboration.

iManage extends to other data sources to provide easy access to information through a single workspace, including access to and managing of e-mail. The solution is also fully integrated with the Office 365 Suite. Governance and records management is provided by the iManage Govern solution. Global security compliance and threat detection are also strong attributes of the platform.

iManage acquired RAVN Systems in mid-2017, adding advanced search capabilities to the platform and providing content awareness for work-product management. RAVN's AI platform enables customers to organize, discover, and summarize information from large volumes of documents and unstructured content. Plans for RAVN include auto-classification and contextual search capabilities to extract key data and identify those documents subject to compliance requirements.

Nucleus interviewed end-users and found that iManage focuses on document management, records management, collaboration, and security. Customers said that the platform is easily customizable, stable, simple to navigate, and has rapidly expanding functionality. Several users noted that iManage improved business agility with quick access to legal documents, thus improving productivity and reducing time to value when meeting with clients. Other customers noted that iManage is scalable and provides strong content security with tight e-mail integration.

Most enterprise law firms that use iManage remain on-premise and will likely remain so. Nucleus expects that iManage will continue to be a strong provider in the legal and professional services spaces and will expand its functionality and grow its customer base over the next year.

OPENTEXT DOCUMENTUM

OpenText acquired Documentum in January 2017. Documentum is a stable platform with a broad range of capabilities and functionality, particularly in its support for content-centric and compliance-centric business processes. Documentum is a standalone offering with a different client base than the OpenText Content Suite. OpenText does not intend to push for migration of Documentum customers to Content Suite; rather, OpenText continues to invest in the Documentum product and its large install base. The vendor plans to integrate new capabilities such as analytics and viewing, providing Documentum customers with a robust hybrid product offering.

Documentum clients tend to be clustered in the high governance areas due to the solution's strong security capabilities. All clients interviewed referred to the platform as stable and predictable, with solid functionality, but none described the platform as innovative. Clients in highly regulated markets voiced satisfaction with the application, stating that they had confidence in Documentum's ability to properly protect data. Several users remarked that deployments took a long time – greater than nine months – with multiple issues, but that once fully operational, Documentum worked well. However, none of these deployments occurred in the past three years, so Nucleus cannot accurately evaluate the success or failure of the current implementation process. A few users interviewed voiced confidence that the

acquisition by OpenText would be beneficial to clients and that Documentum as a program valued by specific verticals such as life sciences will continue to be a viable option under OpenText leadership.

Over the next five years, Documentum has defined a path forward to cloud services with expanded content management across additional areas and expanded use of analytics to deliver actionable insights. OpenText has committed to supporting Documentum and its users without compromising the product. Documentum must continue to deliver additional functionality to current customers and must attract new customers to have a future as a competitive player in the market.

SPRINGCM

SpringCM offers a cloud-native platform with strong out-of-the-box functionality for document management, business process automation, and governance that allows for low implementation time. SpringCM offers strong capabilities for unstructured content management and has a strong presence as a solution for technology companies and industries with significant regulatory requirements, such as government and financial. The vendor offers business process automation for contract lifecycle management, client or employee onboarding, case management, regulatory compliance, and processing.

SpringCM hosts its own infrastructure with four data centers in the US and Europe. Its solution automatically OCRs scanned documents to provide end-users with fully searchable documents. SpringCM's strengths include document generation, workflow creation, and document execution. Particularly robust is the solution's capabilities for digital contract execution. SpringCM offers extensive integrations that make every element of the platform accessible through APIs. AI capabilities enable SpringCM to intake documents and automatically facilitate their organization.

In August 2017, SpringCM announced that its document and contract lifecycle management solution had been FedRAMP certified. In December 2017, SpringCM released an enhanced Workflow Designer that provides a more intuitive UI.

SpringCM users report that enhancements to usability have improved the customer experience. Nucleus interviewed current users to assess usability, functionality, and improvements since the last ECM Value Matrix. Clients reported advances in customer support, workflow automation, and the UI. Several clients noted the efficiency and value of the collaboration tool and the quality of governance and security. End-users also commented that the platform increased productivity, freeing critical staff from manual and time-intensive tasks. Document previewing

has been well received, improving usability and clarity for users. One customer emphasized the functionality of SpringCM's contract management functionality, stating, "We have cut in half the amount of time it takes to review and sign a contract – that's phenomenal."

SpringCM has differentiated itself in the market with rapid deployments, simple integrations with API's and connectors, and deep functionality. Its product roadmap for 2018 includes a redesigned dashboard with additional navigation tools and task management, leveraging AI for analytical reporting, and records management. SpringCM plans additional enhancements to the user experience, in addition to its substantial functionality.

ABOUT THE MATRIX

The Nucleus Research Technology Value Matrices are published annually, reflecting Nucleus's core research areas. Through the analysis of end-user experiences, vendors are evaluated on both usability and functionality – key drivers of value – and placed into four categories: Leaders, Experts, Facilitators, and Core Providers. Customers can use the Matrices when investigating technology options to create vendor short-lists, as well as make a case for upgrading or maintaining existing applications. The Matrix is designed to be a complement to Gartner's Magic Quadrant by providing a view of the relative value of competing solutions that are aligned with the buying cycle. For more information, please refer to Nucleus Research *r59 – Understanding the Value Matrix*, April 2017.