

TECHNOLOGY AUDIT

KnowledgeWorker








Datum International

BUTLER GROUP VIEW

ABSTRACT

KnowledgeWorker is a modular content management system, which comprises a number of components that include: Portal Home Page, Document Management (DM) and Scanning, Records Management (RM), Workflow and BPM, Enterprise Search, Project Collaboration, XML Publishing, and Microsoft SharePoint Integration. It enables organisations to manage increasingly wide-ranging types of content such as text, video, and audio as a single electronic document. The strength of the product lies in its DM functionality, which enables users to manage the lifecycle of documents effectively. Although it has extensive RM capabilities, it is not yet sufficiently robust for highly-regulated industries that require very tight controls on records. Butler Group believes that its value lies in providing organisations that require less format RM capabilities with the ability to manage the retention of information that has value for the business rather than for a regulator.

KEY FINDINGS

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|  It is a content management solution combined with contact relationship management. |  Includes powerful BPM functionality with Project Stage Gating. |
|  It has very strong DM capabilities. |  It includes a powerful search engine. |
|  Content can be moved between storage tiers. |  Project collaboration is supported. |
|  SharePoint content is only copied when declared as a record and not moved to the KnowledgeWorker repository. | |

Key:  Product Strength  Product Weakness  Point of Information

LOOK AHEAD

Datum International will continue to enhance KnowledgeWorker.

FUNCTIONALITY

Unstructured information accounts for around 80% of the total data within the average organisation. This information can take the form of electronic documents, spreadsheets, presentations, reports, scanned documents, multi-media, e-mails, and faxes, and can be stored in corporate file systems on central servers, desktop PCs, laptops, and in paper-based filing cabinets. Due to the growing number of regulations and legislation much of this information needs to be retained. However, if it is stored in all of these disparate systems it is impossible to manage it effectively, ensure that it is available for employees that need to use it, and more importantly, ensure that it is discoverable should a regulator or court require it. It is also impossible to ensure that there are no smoking guns within the organisation – pieces of information that management does not know about that could land the organisation in trouble with a court or regulator. It is no defence to plead ignorance about a contentious piece of information or to claim that a document or e-mail no longer exists because it has been destroyed under the organisation's policies, only for it to be discovered that a copy still exists on a local hard drive.

It is therefore imperative that organisations have Information Management strategies in place that dictate how they manage growing volumes of information. An important element of this strategy is a Document and Records Management (DRM) solution, which enables organisations to effectively and efficiently manage their information allowing users to locate, use, and share the information they require to make informed decisions and perform their roles. It also allows discovery requests to be addressed speedily and ensures that there are no smoking guns.

There is a wide variety of DRM solutions available ranging from DRM capabilities within an Enterprise Content Management (ECM) platform to specialist Electronic DRM systems (EDRM). Datum International provides what Butler Group would describe as a hybrid product, which provides more extensive functionality than an EDRM, but it does not include all of the features expected of an ECM platform, such as Web Content Management (WCM). It does, however, include Contact Relationship Management, which is not generally included in ECM platforms.

Product Analysis

KnowledgeWorker is a modular content management system, which comprises a number of components, which are: Portal Home Page, Document Management (DM) and Scanning, Records Management (RM), Workflow and BPM, Enterprise Search, Project Collaboration, Project Stage Gates, XML Publishing, Contact Relationship Management, Microsoft SharePoint Integration, and MS Office and Outlook Integration. It is unusual for a product of this type in that it manages contacts, helping organisations to manage their relationships through the content management system, and Butler Group regards this to be a powerful differentiator.

In Butler Group's opinion, the strength of KnowledgeWorker lies in its DM capabilities. These include all of the standard features that are expected to be present in such a system including check-in and -out, versioning, rollback, auditing, document cataloguing, document task launch, metadata tagging, relationship trees, and access rights and permissions. One of the advantages of the system is the ability to manage text, video, audio, electronic documents, scanned images, and graphics as a single electronic document. The DM repository stores, classifies, and manages all content. Users are able to work within the Microsoft environment they are familiar with such as Microsoft Outlook or an Internet browser.

Included with the DM module are the Document Library, Record Management, Content Security, Collaboration, Task Management, and Content Relationships. Documents are managed by the library in a virtual hierarchy of folders, which is simple to navigate through. The DM capabilities have been built with scalability in mind and have been designed to manage millions of documents and files stored in file vaults. Each user has a personal workspace where personal information and work in progress may be stored, which cannot be viewed by any other user.

KnowledgeWorker includes extensive RM capabilities, including most of the features that are expected of a RM solution such as the ability to automatically declare as a record, a document or other item of information at a particular stage in its lifecycle, a distributed storage system, retention schedules, automated disposals, auditing, and multiple taxonomies. However, there is a weakness in the RM functionality, which Datum must address if it wishes to move into highly-regulated industries.

It concerns the SharePoint integration. When information that is stored within SharePoint is declared as a record, it is copied to the KnowledgeWorker repository where RM policies are applied to it. However, the original version, which is left in SharePoint, is not managed by KnowledgeWorker and users are free to amend or delete it according to their access rights and permissions. This means that when the record is deleted in KnowledgeWorker, copies of it may still exist in the SharePoint repository, which could land an organisation in trouble with a court or regulator.

Datum states that its customers have not asked for this feature, and indeed want to be able to continue amending items of information even after a point-in-time copy has been declared as a record. Butler Group's solution to this conundrum would be to create two versions of KnowledgeWorker, one with informal RM, for organisations that want to retain information for internal purposes, but do not require formal RM, where all copies of a record need to be managed as a single entity, and a compliance version for organisations that need formal RM and need to be able to prove that a record has not changed in any way and that all copies have been deleted on disposition. This, we believe, would enable Datum to widen its customer base. Datum has stated that this weakness will be addressed in version 4 of KnowledgeWorker, which is due for release in Quarter 2 of 2009.

KnowledgeWorker provides some support for physical records. They are managed by creating data records in the system which are searchable, and store user-defined data about the physical record including its location. A simple check-in/check-out facility can be used to control access to the physical record.

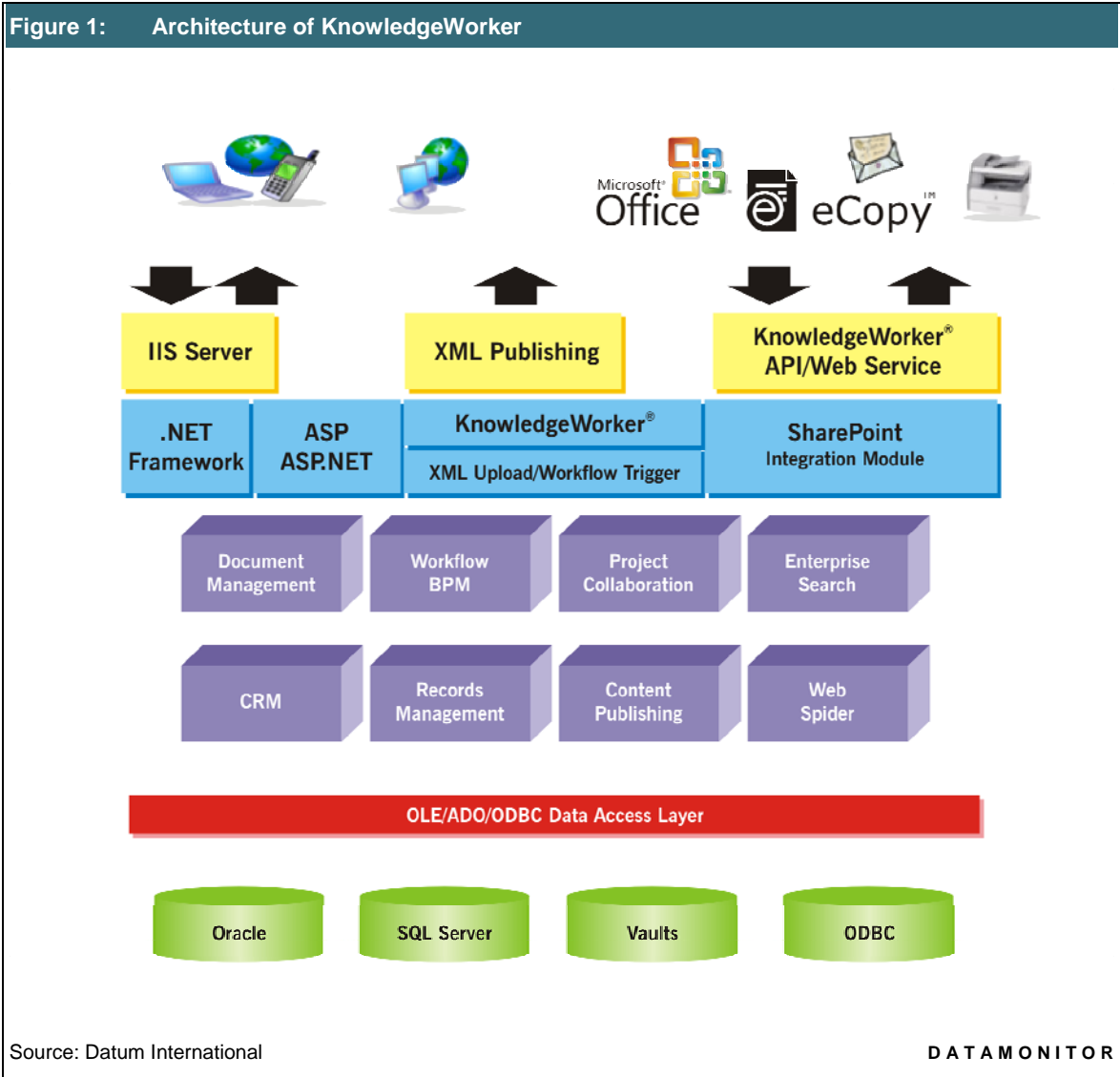
However, KnowledgeWorker also has a number of strengths. One of these is the ability to move objects from one storage tier to another using the powerful BPM capabilities. This allows organisations to use KnowledgeWorker to help implement a tiered storage approach by automatically moving objects based on events, such as a record or document not being accessed for a pre-defined period of time, or a document being declared as a record.

Product Operation

KnowledgeWorker is a .NET-based *n*-tier application, which consists of an ASP and ASP.NET front-end with a .NET business logic layer written in C# and some COM+ components written in Visual Basic.

Metadata is stored in the relational database, which is either SQL Server or Oracle, and this can be clustered for scalability. Documents and files are stored in file vaults, which are virtual storage areas that can be spread across multiple machines and file systems.

The Vault Manager ensures that the optimum number of files is stored in a folder before a new folder is created. According to Datum the architecture will support hundreds of millions of files with little or no performance degradation. The system has been tested with up to 10,000 concurrent users with the simulation software. KnowledgeWorker supports most failover and back-up environments to provide fault tolerance.



A Portal Home Page is available to provide a personalised information view for each user, which can be customised by the user. Alternatively users can work and access KnowledgeWorker from within applications they are familiar with such as SharePoint or Outlook.

Extensive workflow and BPM capabilities are provided through KnowledgeWorker Workflow, which includes a browser-based drag-and-drop visual process designer that incorporates functions such as document assembly, task escalation, e-mail templates, and the ability to create parallel tasks. In addition, it is Web services enabled, which allows it to be easily integrated with other applications such as Finance, HR, CRM, and ERP solutions. Organisations are able to automate internal processes and provide a complete audit trail of process and outcome.

Once the processes have been created using the designer, the workflow engine automatically generates Web forms that are dynamically routed to the participants of the process containing instructions, attached documents, tasks, and comments. A single click provides a graphical representation of active workflows providing appropriate users with full visibility. A complete audit trail is maintained of each stage within every workflow instance. This information can be used to create reports, not only for accountability and compliance purposes, but also to identify bottlenecks in processes.

Extensive search and retrieval capabilities are provided, with multiple methods of searching for information including: Boolean Search, Proximity Searching, Bayesian Inference, Shannon's Information Theory, and Compound Term indexing. In addition, it provides probabilistic (latent semantic indexing), relevance ranking based on probabilistic (Bayesian inference), and transparent access to system internals including the statistical profile of terms.

The KnowledgeWorker Index Server is implemented as a suite of Windows programs. It has a number of collectors, which are: HTTP collector for spidering Web pages, File collector for documents located in file systems, and XML collector for custom document types. Native file conversion filters are available for all HTML and XML formats, Microsoft Word and rich text formats, PDF, and any other files in text format such as TXT and CSV. Support is provided for a number of languages, which are Danish, Dutch, English, Finnish, French, German, Italian, Norwegian, Portuguese, Spanish, Swedish, and Welsh. The module has been built for scalability, and concurrent indexing at full speed can take place at the same time as retrievals. In live implementations the Query Server, Index Server, and the Web Application are normally distributed, and multiple Query Servers can be configured for very large implementations to provide shared access from a pool of application servers. A multi-server configuration is capable of indexing around two million pages per day whilst simultaneously providing the retrievals to hundreds of concurrent users.

A number of other features are available in KnowledgeWorker including Project Collaboration, which allows secure virtual teams to be created with members provided with project specific Document Libraries, News Publishing, and discussion areas for sharing information, collaboration for documents and drawings, threaded discussions, and news publishing, whilst Tasks provide an ad hoc method for organisation project activities. Project stage gates allow the management of complex projects over long periods with automatic workflow and business process triggers and a digital dashboard project monitoring page. XML Publishing allows content to be published on-the-fly using an XML-based Web service.

Product Emphasis

With a plethora of different types of content in use within organisations, it is becoming increasingly difficult to manage unstructured information effectively. Despite this, many organisations fail to realise that by not managing their information, employees are recreating standard documents each time one is required, they are spending long periods of time looking for information, and supporting information is not to hand when they are dealing with clients. All of these factors can impact an organisation's reputation and ultimately its profitability.

A DRM system, such as KnowledgeWorker provides a central repository for all unstructured information making content readily available to users for reuse, or for use as supporting information when dealing with clients. Its strong BPM capabilities enable organisations to create solutions that bring information and structured data together from diverse sources, which makes it suited to many vertical markets.

DEPLOYMENT

The resources required to implement KnowledgeWorker depend on the extent of the deployment. A project Manager is assigned to each new implementation and is responsible for performing a full review of the requirements, based on the modules selected. Project roles and responsibilities are dependent on the type of implementation, which may be a generic standalone solution, or it might be integrated into other systems such as Finance/ERP, HR, or other business applications. The roles that are considered for each project are: Client Project Sponsor, Client Project Manager(s)/Coordinator, Client Project Team (User Based), Client IT Support Team, Datum Client Services Manager, Datum Project Manager, Datum Application Consultant, Datum Technical Consultant, and Datum Training Manager.

Each of these personnel has clearly defined roles and responsibilities. For example, the Datum Training Manager is responsible for working with the client's user-based project team to identify the training requirements of the users of the system, and developing a skills matrix that identifies the training needs of the end-users of the system. The Training Manager also delivers training courses to client trainers in line with the requirements of the client, and delivers ongoing training as required. Datum believes that it is important to note that some customers have been trained and are operating the system within a week of the implementation.

In larger implementations it is recommended that the client support team have more in-depth administrator training to be able to create workflow processes. The training includes the creation of categories, tasks, the linking of tasks, and decision points, how the workflow process functions, and how it can link to other systems. An understanding of ASP, .NET, Visual Basic, HTML, and databases is advantageous if developers wish to customise the interface or create more sophisticated business processes than can be achieved using the out-of-the-box configuration options.

Implementation of KnowledgeWorker can take from two weeks to eight months depending on its scale, but the average is approximately three months from receiving the order. The product can be implemented in a modular fashion, but the foundation suite is necessary.

Depending on the scale of the implementation, the system can be entirely administered by the client with technical staff or through Datum or one of its partner consultants.

All training is currently carried out either at the client site or through scheduled courses at Datum's training centre in Stevenage, UK, or Partner training centres in various locations. Datum is also going to provide Web-based training courses initially for refresher courses and for end-users.

Technical support is provided through a dedicated team who provide on-line technical support and application guidance. In addition to regular updates, the support and maintenance contract provides helpdesk support during office hours, access to technical resources for advice and guidance, problem resolution, maintenance software releases, the ability to submit calls and questions via e-mail or telephone, and access to an on-line knowledge-base of known problems and solutions.

KnowledgeWorker requires IIS for Web access, and either SQL Server or Oracle as the database. The product has been integrated with legacy systems, some of which are through third-party systems.

Whether or not business processes need to change to support the product depends on how effectively organisations are running processes prior to the implementation. KnowledgeWorker is often implemented to help change and automate existing business procedures. Datum believes that the major risks that may cause the project to fail are due to trying to take a big bang approach to implementation or by not being able to commit sufficient customer resources or time to the implementation.

Pricing for KnowledgeWorker is based on the modules purchased. The Knowledge Worker Foundation Modules are priced per concurrent user and are mandatory. They comprise KW Document Management, KW Search, which includes Boolean, Item Search Filter, and Category Search, KW Project Collaboration, and MS Office Integration. KW Workflow is priced per concurrent user and is optional. KW Tools are priced per server and are mandatory. These tools include: KW Install Shield, KW Vault Manager, KW Notify-Alerts, KW Workflow Trigger, KW Import Vaults, KW XML Uploader, and KW ALP. KW Contact Management includes Outlook synchronisation. It is priced per concurrent user and is optional. Other optional modules are: KW Project Stage Gating, which is priced per concurrent user, MS Outlook Integration, which is priced per concurrent user, KW Advanced Search Engine, priced per server, KW e-Copy Connector, priced per scanning device, KW Scanning (Scan to Tiff), priced per scanning device, KW Intelligent Capture Engine (ICE), Microsoft SharePoint Integration, which is priced per server, and LDAP, which synchronises with Microsoft Active Directory and is priced per server.

PRODUCT STRATEGY

KnowledgeWorker is a horizontal product applicable across many different market sectors. The vertical target markets are determined by the reseller channel, and the various areas of expertise of each reseller. The target market in terms of size is again dependent on the reseller size, its ability to deliver, and its ability to resource each deployment. In general customers have revenues of UK£10 million and above.

The Return On Investment (ROI) is calculated individually for each deployment, but in most cases it is achieved within the first year according to Datum.

Datum sees its key market opportunity in mid-market organisations and divisions within larger organisations that require specific solutions. The route to market is through a select accredited channel partner programme, and this is an area that Datum is actively expanding. Key business partnerships include resellers such as Thales Information Systems, which has access to a large IT resource, and FD Systems, which is the largest Sage partner in the UK, and provides KnowledgeWorker as an integrated solution with Sage Accounting and ERP solutions. Key technology partners are Microsoft through the development tools, and Microsoft SharePoint integration, and Concept Search, which provides the Bayesian Inference search engine.

Many of KnowledgeWorker's competitors have been acquired such as Meridio and Hummingbird. At the top end of the market, competitors include Open Text, EMC, Oracle, IBM, and TOWER Software. Competitors depend on the sector that KnowledgeWorker is being proposed for, and Datum sometimes finds itself competing against Interwoven, Anite, and Comino. Microsoft SharePoint is also a competitor, but should also provide an opportunity as organisations need to scale beyond its capabilities.

The licensing and service costs differ for each deployment. Generally the licence and service costs are 50-50, although some deployments require very little services. The licence is perpetual with an annual maintenance fee. During 2008, KnowledgeWorker will be supplied as a Software as a Service (SaaS) solution, which will make the solution available to a wider customer base.

Average KnowledgeWorker deployments for mid-sized organisations typically range between UK£30,000 and UK£80,000, although the company has installed some large licenses of up to UK£300,000. The costs are divided approximately 50-50 between licence and services. Annual maintenance and support is 20% of the licence fee and includes new releases.

The release strategy for KnowledgeWorker is to have one new release per annum with interim Service Pack releases.

COMPANY PROFILE

Datum International is headquartered in Stevenage, UK, with a development centre in India. The company was created in 1997, specifically to provide consultancy and implementation services for ECM solutions. Using this experience, KnowledgeWorker was created as a generic integrated ECM solution, with the first version being launched in 2001. Datum International is a public company, which is listed on the PLUS market. Its shareholders include several City institutions. The company currently has 22 employees, with ten in Research and Development, four in Sales and Marketing, four in Support and Services, and four in administration. The company's growth is running in excess of 50% per annum.

Customers of KnowledgeWorker include AXA Investment Managers, Thales, Beaverbrooks the Jewellers, Birmingham City Council, Reds Construction, Trimite, FlaktWoods, and Hospira. Each of these customers represent global, departmental, or companywide deployments with specific but business-critical solutions. The largest site is a 6,000 user deployment and the smallest has 20 users. There are currently 86 companies worldwide using KnowledgeWorker.

SUMMARY

Datum International is a company that stands out amongst its competitors, as it combines content management with contact relationship management to create a hybrid product that allows organisations to manage relationships with contacts or customers as well as managing their unstructured information, which is typically used during interactions with customers. In Butler Group's opinion, this will make Datum an attractive proposition to larger vendors wishing to move into this area. KnowledgeWorker has a number of strengths that make it applicable across many market sectors. However, the weaknesses in its RM capabilities means that it is not suited to highly-regulated industries, although we feel that it would not take much effort on the part of Datum to rectify these shortfalls, which would enable organisations requiring very formal RM to use KnowledgeWorker. It is our view that this is a product that will continue to improve as it is further developed and that Datum International is a vendor to watch. For any organisation wanting informal rather than formal RM, it is well worth a closer examination.

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