

PRODUCT SHOWCASE

KnowAll Matrix: Designed by a UK Legal Librarian to Future-Proof Your Legal Library

Abstract: In an era where efficient information management is crucial, KnowAll Matrix stands out as a transformative tool for legal informational professionals. It was developed by an experienced UK legal library consultant, Penny Bailey, and here **Bailey Solutions** explains how this innovative platform goes beyond standard library management systems to offer a future-proof solution, revolutionising access to legal knowledge. Utilised by large law firms, barristers' chambers, government libraries, European agencies, a European parliament, and other organisations, KnowAll Matrix supports information staff to proficiently manage all traditional library functions, including cataloguing, subject indexing, classification, circulation, loans, acquisitions, and serials management. Furthermore, it offers essential features for modern electronic resources management. Its user-friendly interface ensures seamless discovery of both print and digital resources in a single search, prioritising user convenience. Over two decades, as the legal and technological landscapes have evolved, so too has the product, with innovative features like multi-hierarchical taxonomies, practice group resources, single sign-on, and contract renewals. This article delves into these new features and their utilisation by clients to make the library and information centre a primary resource for legal professionals seeking information.

Keywords: collection management; library management systems; information management; cataloguing; classification; taxonomies

KNOWALL MATRIX IN LEGAL LIBRARIES

Launched in 2020, the KnowAll Matrix library and information management system was created to meet the complex needs of legal information centres and libraries. Employing browser-based technology, it was a direct rewrite of its successful Windows-based forerunner, KnowAll, which was first released in 2003.

Bailey Solutions, the company that owns and created KnowAll Matrix, has close associations with the UK legal information sector. Penny Bailey, the founder and Managing Director of Bailey Solutions, is a Chartered Librarian who has worked in legal libraries as a freelancer and as a consultant for The Law Society of England and Wales. Her experience gives her the ideal mindset to spot opportunities to support legal library and information professionals in the work they do.

For example, an earlier system, called PenLib, was the first system developed specifically for legal libraries using Microsoft development tools in the UK. KnowAll Matrix uses the same unique data structure which supports library managers who need to keep track of complex legal serials and multi-volume sets. Both Bailey Solutions' systems uniquely support three levels in the catalogue whereas other systems only offer two levels: the bibliographic record and local holdings. KnowAll Matrix offers the bibliographic record too, but local holdings are split into copies or sets and then the copy items or volumes that make up the set. This is highly efficient for multi-volume sets. In other systems, you usually catalogue every volume as a title and then record your holdings. In Bailey Solutions' systems, you catalogue the title, then add the copy holdings with its location, and then simply list the volumes in each location. Library users enjoy a more streamlined display in search results because the



title is listed once, and they can easily view the holdings in each location.

SUPPORTING LEGAL CLASSIFICATION AND TAXONOMIES

The KnowAll Matrix is designed to support legal classification and taxonomy models, providing an organised framework for cataloguing and indexing legal resources. With its ability to accommodate various published or in-house classification schema, along with Westlaw and NosLegal taxonomies, it delivers a wide-ranging solution for legal academic libraries and law firms alike.

KnowAll Matrix supports Elizabeth Moy's *Classification and Thesaurus for Legal Materials*¹ and The Squire Law Library classification,² both widely used in legal academic libraries. And for information professionals working in law firms, requiring a more pragmatic and in-depth classification scheme, the system can be used with Westlaw's Legal Taxonomy³ which was first developed as the schema for the Legal Journals Index.⁴ Penny contributed to the Legal Journals Index in the late 1980s, so was very familiar with its terms.

Penny recommends Westlaw's Legal Taxonomy to clients who are looking for a legal taxonomy for their collection and many have taken advantage of Bailey Solutions' offer to import it into their system and match up their existing keywords. Clients often use this extensive list as the starting point for their firm's subject taxonomy, expanding or contracting it to reflect their specialist areas. In turn, this makes life easier for lawyers who use Westlaw, as they will already be familiar with this vocabulary when they carry out searches or browse by subject.

Recently, Penny became aware of the new NosLegal Taxonomy⁵ and approached the creators for permission

to offer it to clients, which was granted as it is an open-source tool – visit the home page of the NosLegal website to see the impressive roll call of who is involved. NosLegal differs from Westlaw's Legal Taxonomy in providing descriptors for the type of work lawyers do, legal entities and transaction types. It covers the following nine facets: Needs, Work, Subjects (Entities), Places, Perspectives, Sectors, Laws, Information Assets, and Combinations. Whilst there is some overlap, for example, Places is also a section in Westlaw, overall NosLegal is an ideal complementary taxonomy to Westlaw. The two taxonomies can be used side by side to provide additional descriptors, especially when the information professional is cataloguing their firm's own knowledge and information resources. Fortunately, at the point of discovering NosLegal, KnowAll Matrix had already been expanded to be able to accommodate more than one taxonomy. See the section below in this article for information on the new multiple hierarchical taxonomy capacity in KnowAll Matrix.

SORTING OUT INFORMATION CHAOS

In today's fast-paced legal environment, firms must provide their fee-earners with quick and easy access to the information they need, whether it's in published or unpublished sources. The demand for information is not diminishing, in fact, the requirement to source relevant information with minimum effort is the key to profitability. Inefficiently organised network folders can lead to a multitude of issues for a law firm. Firstly, the time wasted by fee-earners searching for files can result in a decrease in productivity. Instead of focusing on their actual work,

they spend valuable time combing through folders, causing frustration and delays. In addition, the mixing of client files with internal documents poses a risk to confidentiality. If sensitive client information is accidentally accessed or shared, it can have serious legal and reputational consequences for the firm.

Furthermore, without a standardised system in place, files may be duplicated or saved in multiple locations, leading to confusion and a waste of storage space. This not only makes it difficult to find the correct version of a document but also increases the risk of errors and inconsistencies in the work being done.

So why not use the search in your document management system (DMS) to find information? The problem is a DMS will search and deliver all documents including client files. Studies show that only a small percentage of files contain relevant knowledge or information. This can create serious problems for junior practitioners who are tasked with identifying the correct files without any guidance. In such situations, senior lawyers may become bottlenecks, slowing down the entire process and leading to poor outcomes. In the worst-case scenario, you could be at risk of negligence claims if less experienced colleagues are left to it.

To avoid these risks and maintain high levels of productivity, firms must prioritise efficient information management practices. Penny's article, "Getting a Handle on Information Chaos"⁶ gives tips on identifying and organising files. It explains the role a system like KnowAll Matrix can play in solving information chaos, improving productivity, and ensuring that information staff are viewed as curators and guardians of all information and knowledge in the practice whether published or unpublished.

Furthermore, when savvy clients use KnowAll Matrix to catalogue or create metadata for information files, lawyers benefit from an efficient single search for published and unpublished information resources. By cataloguing traditional printed law reports, statutes, journals, and textbooks alongside online resources in content platforms like Westlaw and LexisNexis, know-how documents, precedents, bibles, opinions, e-books, and e-journals in a single online catalogue, legal information professionals can provide users with a comprehensive range of resources in one convenient platform. Lawyers only use one search to find materials from various sources and can find published information resources alongside unpublished documents, whether printed or electronic. For more information about how to use KnowAll Matrix as a single search solution for your resources see "Revamping Legal Libraries: Single Search Solutions for Your Legal Resources", by Penny Bailey.⁷

THE BENEFITS OF SINGLE SIGN-ON

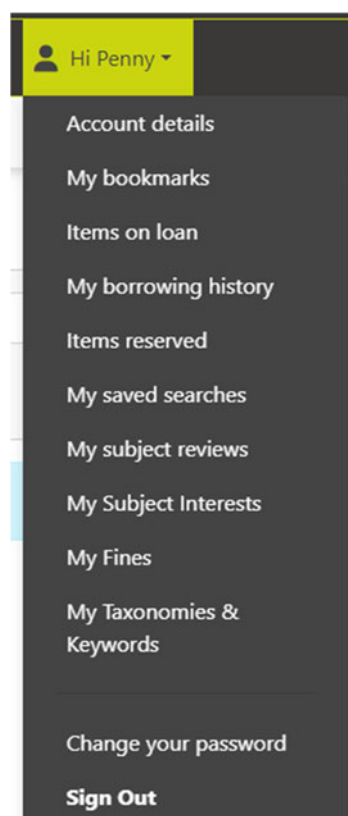
Bailey Solutions has integrated single sign-on (SSO) functionality into both KnowAll Matrix and Simple Little Library System, not only in response to numerous client requests but also because of the substantial advantages it

presents. Identity platforms supported include Okta, Microsoft Azure Active Directory, Auth O, and OneLogin.

Single sign-on is secure because users only need to remember a single unique password, instead of different passwords for each application. When users only need to remember one password, the risk of password fatigue drops significantly, and with it the rate of time-consuming password resets. What's more, since they only need to log on to one secure platform, once per day, you eliminate the chance of users repeating passwords or using weak passwords across multiple insecure applications. Secondly, the SSO authentication system is encrypted and protected with security protocols such as HTTPS. The security of single sign-on can be further enhanced using strong authentication methods such as two-factor authentication, as well as providing proper levels of access control and access logging.

A major advantage of SSO is the elimination of the need for laborious password management. SSO removes barriers to busy library users accessing KnowAll Matrix because they don't have to remember or reset passwords. Once signed in they have a better user experience with access to their saved searches, bookmarked favourites and their loan history.

When users are logged into KnowAll Matrix automatically with SSO, library staff can generate qualitative information management reports using key user information, such as users' location, type, and department. Using this



Penny Bailey's account menu

data, segmented reports can be generated on user behaviour and preferences. If users are not logged in, only general information can be reported, like how many searches. Informing future decisions about how best to serve the library's users based on this data can be helpful. The library staff can also easily see which resources are most frequently used and which may require more attention because all user activity is tracked in one place.

Finally, KnowAll Matrix SSO functionality offers user synchronisation, which significantly reduces library staff time spent on managing user data because it imports and updates user data from the identity platform.

THE POWER OF MULTI-HIERARCHICAL TAXONOMIES

KnowAll Matrix has always had a powerful multi-hierarchical taxonomy included in the system to support subject indexing. A hierarchical taxonomy is an organised system of categories, labels, and descriptors that allow for the efficient indexing of content in a collection. They are also known as hierarchical indexing, preferred vocabularies, or controlled vocabularies. Hierarchical taxonomies are used to create a structure for storing and retrieving data by assigning metadata descriptors to items. This helps users navigate and find information in your collection more quickly. The terms in the hierarchical taxonomy, as the name suggests, are arranged hierarchically, meaning they form a multi-layered structure with a top-level parent term and child terms beneath them. The hierarchy allows each term to be classified further, making it easier to search and retrieve specific

The nine facets



NosLegal Taxonomy Facets

content. For more information about hierarchies see Penny's article, "A Modern Librarian's Guide to Hierarchical Taxonomies".⁸

However, the support team became aware of the need to have more than one hierarchy in the system, perhaps for different languages, or to add other attributes. Subject indexing is only one aspect when creating metadata for information retrieval. Particularly in the legal sector, the support team became aware of requests to add more taxonomies like type of work, sectors, industry, and practice groups. In 2022, the ability to create additional taxonomies was added to KnowAll Matrix. It was very fortuitous that Penny discovered the NosLegal Taxonomy shortly after and gained permission to import it for clients. NosLegal Taxonomy takes the pain out of developing your own taxonomy for these additional attributes.

Alongside the ability to accommodate more than one taxonomy in the system was the ability to create additional 'Refine by' or 'Narrow by' filters for the search results from the additional taxonomies. For example, if you add a new taxonomy called 'Sectors', the library staff could also add this as a new 'Refine by Sector' option in the search results.

The advantage of doing this is to provide the user with multiple ways of accessing the information resources and filtering very quickly to get to the precise resource needed for their task. So, if a lawyer needs a 'Conveyancing Contract' for the 'Aircraft' industry acting for the 'Seller', they can find that quickly without having to browse through hundreds of items under Contract Law.

With limitless potential, system administrators can now add an unlimited number of custom fields of diverse types, form endless new hierarchical taxonomies, and allocate unlimited terms to the resources. This makes KnowAll Matrix a very powerful and adaptable system suitable for traditional library management, electronic management, and knowledge management. KnowAll Matrix is not just a traditional library system for managing hardcopy books, it does so much more. For an example of an organisation using KnowAll Matrix's multiple hierarchies to great effect in a research library see Alison Jones' article: "Dialogues on a Digital Library: Co-designing the Atlassian Research Library".⁹

OPTIMISING PRACTICE GROUP RESOURCES

Bailey Solutions also received requests to create ways to deliver relevant content to busy lawyers based on their practice group. Systems analysis informed the decision that practice groups were both a user attribute and a resource attribute. A lawyer belongs to one or more practice groups and a resource can be used by one or more practice groups. So, this request was handled as part of the

Refine By:

Online

Online Only? 10

Westlaw Taxonomy

Company law 3

Family law 2

Administration of justice 1

Animal diseases 1

Animal welfare 1

+ Show All Westlaw Taxonomy

NosLegal Taxonomy

Family 2

Individual 2

Family 1

Interpersonal relationships 1

Parent - child 1

+ Show All NosLegal Taxonomy

Additional new refine-by filters

taxonomy development. Until recently, the taxonomy was only used for the indexing of titles, but the new taxonomy functionality allows for taxonomies to be applied to users as well as the catalogued resources in the collection.

The next step was to create a new gadget for the user's home page which can look up the practice group (s) the user is tagged with, and then present resources tagged with the same practice group in media groups like books, e-books, journals, law reports, etc.

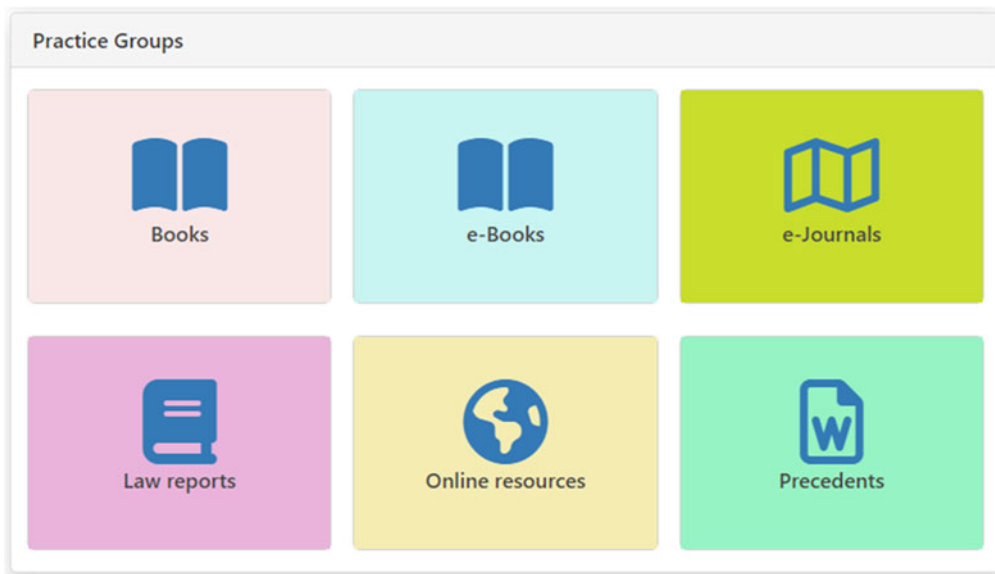
The user must be logged in for the system to be able to look up their practice groups, which is why Single-Sign-On (as outlined above) is vital for the user to get the best personalised user experience.

ELECTRONIC RESOURCES MANAGEMENT

Bailey Solutions was aware that electronic resources management was key to any modern library management system, but rather than develop a separate module, the developers' analysis of the requirements led to a different approach. Electronic resource management (ERM) is the process of tracking the selection, acquisition, licensing, access, maintenance, usage, evaluation, retention, and de-selection of a library's electronic information resources. These resources include, but are not limited to, e-journals, e-books, content platforms, internal documents, websites, and CD-ROMs. Some of the key aspects of managing electronic subscriptions are recording licence terms, renewal cycles, link resolution, and authentication details. The life-cycle of an electronic resource routinely begins with a trial subscription, requiring an initial activation of the resource, then a negotiation of a licence, recording those licence terms, collecting and analysing use-statistics for the life of the subscription, and decision support for renewals or cancellations. However, even if the media is electronic the processes are not dissimilar to processes for managing print or hardcopy resources. So, the decision was taken to enhance and improve the existing modules involved in these processes. Pretty well all modules are affected, and new functionality is being added in small discreet chunks to enhance the handling of electronic resources. The next three sections describe the two most recent developments and future development.

DISCOVERING ONLINE RESOURCES

With more library users working from home, a popular request was to be able to readily identify electronic resources that can be accessed online. Bailey Solutions' developers knew it would be a considerable chore for library staff to have to identify and tag every single online item in their collection, so they looked for an automated solution. They recognised that both media type and location could hold the keys to identifying online resources. A lot of clients use media types like 'e-books' or 'e-journals' to designate online content, so the developers added a tick box on the Media Types Authority List to indicate that the media type was digital. Likewise, where clients have virtual locations like 'Online>Westlaw', 'Online>LexisNexis', 'Online>Network Folders', etc., in their Locations Authority List then these could also be checked as online locations. This enables individual copies to be flagged up as online even if there is a mix of print and online copies on the same title record. What this means for the lawyer is that they will easily be able to identify online resources in search results because these items will have the online badge. All the system administrator does is tick the online box in the Authority List for Media Types and / or Locations and the online badge is automatically displayed for all items with online media types or locations. This functionality was released in July 2023.



Practice group gadget

NEVER MISS A CONTRACT RENEWAL

Early 2024 sees the inclusion of a new Contracts tab to handle all contracts for subscriptions to both print and electronic services. Supplementing the existing Finance and Serials modules, the new contract management tools extend electronic resource management. This critical feature will benefit those clients who have access to our Finance and Serials modules. There are new fields to enter details about contracts and the status of the contract, e.g., trial, live, cancelled, etc., enable staff to track key dates which fuel alerts on the Admin Dashboard about trials ending, break deadlines approaching and deadlines for providing notice of termination of the contract. The idea is that the library staff have all the tools they need to process contracts and never miss a deadline for cancelling or renewing. By centrally storing contracts, all versions are to hand, so the digital resources manager is fully informed and prepared for renegotiations. The Orders and Subscriptions areas of KnowAll Matrix will still operate in the same way, but

additionally, an Order can be associated with a Contract and in turn the library staff can view the titles within the scope of the Contract. This interconnection lays the basis for future analytical usage reports for the whole contract, which in turn enables managers to spot under-utilisation.

LICENCE COMPLIANCE

The next development task is to control access to electronic resources to respect the terms of the contract. A Contract record already includes a section for the scope of the licence. Library staff can record who has licensed access to the resources enabled by the contract whether this is all users, users in designated locations, users in designated practice groups, named users, etc. All library staff need to do in this section is select all users, select the location(s), select the user groups, or select named users. The first three automatically associate users with the licence scope without the labour-intensive task of individually selecting users.



Online Media Types, demonstrating a document in search results with the online badge

The screenshot displays a web browser window with the URL `localhost:44375/LibraryAdmin/Contracts/Edit?id=3`. The page is titled "Contract Information" and features a sidebar with navigation options: "Contract Information" (selected), "Order Details", and "Title Details". The main form contains the following fields:

- Title:** Agra Informa SAAS Agreement
- Reference:** Ref003
- Version:** 1.0
- Status:** Signed
- Start Date:** 25/09/2023
- End Date:** 25/09/2024
- Termination Date:** (empty)
- Description:** testing testing
- Contract Entity:** Test Company A
- Supplier:** Agra Informa
- Contract Type:** Software as a Service Agreement
- Content Type:** on-line resource
- User Coverage:** Unlimited Users
- Renewal Type:** Auto-renewing
- Payment Frequencies:** Fixed term
- Notice Period:** Four weeks notice period
- Break Period:** Six months break period

Contract edit page

In a future release, the software will enforce the scope of the licence when users search and browse, ensuring that only licensed users can access the content. This next phase of development will be part of the Loans module, renamed as the Access & Loans module. For example, if Titles are purchased via an Order associated with a Contract which dictates only users in the Company Commercial Practice Group have licensed access, then only those users can access the content. Once again this is part of the increased personalisation of the user experience, delivering only relevant content to busy lawyers. Another advantage is that with such control mechanisms in place, it becomes demonstrably easier to negotiate licences for part of the firm and not the whole headcount.

In addition, system administrators will be able to set policies which control if users can see the catalogue record, even if they don't have access to the full content. You may ask why you might want to reveal a title that a lawyer can't access. It is so that library managers can gauge insufficient licence coverage and can consider extending the provision.

FUTURE ROADMAP

The forward strategy for KnowAll Matrix aims at enhancing the proficient management of electronic resources across all modules of the system, from procurement to evaluating usage and providing critical information to support evidence-based renewal decisions. Bailey Solutions' roadmap for the future also includes improving functionality for handling internal unpublished information or knowledge within firms. By equipping information professionals with the necessary tools to consolidate and manage all forms of information and knowledge within a single system, Bailey Solutions emphasises the critical role of information teams, enhancing their efficiency and their significance within the firm. Beyond being mere cataloguers of physical books, these information teams prove invaluable in aiding legal practitioners to work more efficiently by sourcing the correct information promptly. Bailey Solutions, in its commitment to continual improvement, warmly welcomes client input for possible enhancements and additional features for KnowAll Matrix.

Footnotes

¹ Elizabeth M. Moys (2012) *Moys Classification and Thesaurus for Legal Materials* (5th revised and expanded edition, De Gruyter Saur)

² Squire Law Library own classification schema

³ M Scott, N Smith, "Legal Taxonomy From Sweet & Maxwell". *Legal Information Management*, 2010;10(3):217–222

⁴ N Smith (1989) "Indexing Legal Journals". *Law Librarian*, 20(1) 1–6

⁵ NosLegal Taxonomy <www.noslegal.org/>

⁶ Penny Bailey, (2023) "Getting a Handle on Information Chaos: How to Keep Track of Files" <<https://knowallmatrix-librarysoftware.co.uk/2023/10/23/getting-a-handle-on-information-chaos-how-to-keep-track-of-files/>>

⁷ Penny Bailey, (2023) “Revamping Legal Libraries: Single Search Solution for Your Legal Resources” <<https://knowallmatrix-librarysoftware.co.uk/2023/09/07/revamping-legal-libraries-single-search-solution-for-your-legal-resources/>>

⁸ Penny Bailey, (2023) “A Modern Librarian’s Guide to Hierarchical Taxonomies” <<https://knowallmatrix-librarysoftware.co.uk/2023/02/07/hierarchical-taxonomies/>>

⁹ Alison Jones, (2023) “Dialogues on a Digital Library: Co-designing the Atlassian Research Library” <<https://medium.com/researchops-community/dialogues-on-a-digital-library-co-designing-the-atlassian-research-library-6cc443864e8>>

Biography

Having obtained her postgraduate diploma in Library, Information, and Archive Studies from UCL, **Penny Bailey** commenced her career in the legal library industry in 1986. She has extensive experience both as an employed librarian and as a freelancer. Her expertise enabled her to establish and operate libraries within numerous legal firms, barristers’ chambers, and large corporate entities. Notably, Penny served as a consultant for The Law Society for England and Wales, addressing issues within the library and information units of various law firms. It was during this period that she developed her initial library system, PenLib, utilising the DataEase relational database management tool. Originally designed to facilitate her own freelance work, the wider value of PenLib in legal libraries quickly became apparent to Penny. Responding to this opportunity, she incorporated Bailey Solutions Limited in 2002 to market PenLib, where she retains her position as the Managing Director to this day. Recognised by Legal Technology Insider as the “clear market leader”, Bailey Solutions holds a strong presence within the UK’s top 250 law firms in terms of library software. Under Penny’s leadership, the company continually enhances its library and information management software, created through Microsoft development tools, for not only the legal sector but diverse other sectors. Today, its Simple Little Library System and KnowAll Matrix cloud-hosted systems are trusted by clients across over 25 countries globally. Over the years, Penny has written numerous articles for legal and information journals and regularly contributes to Bailey Solutions’ blogs.