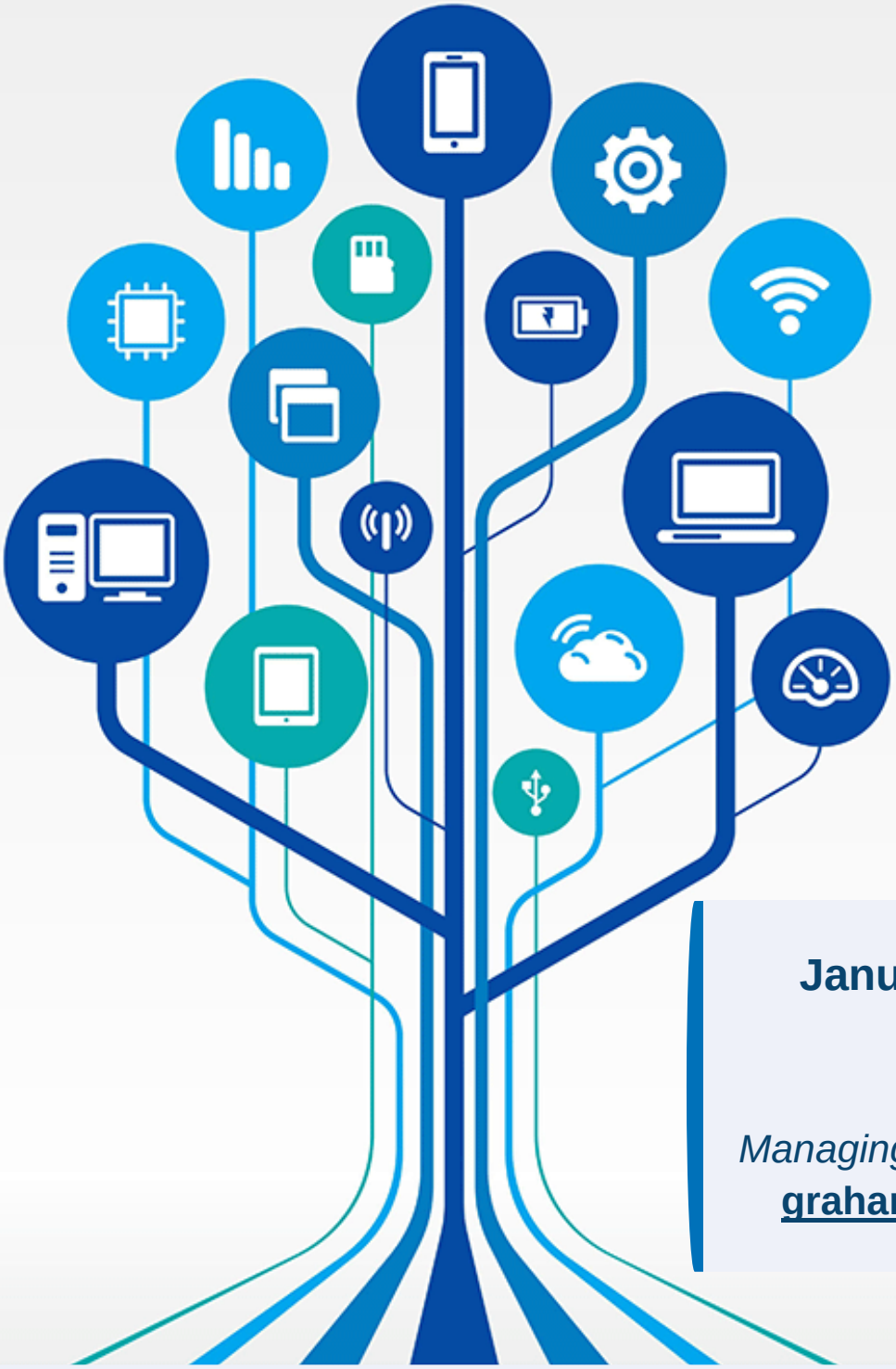

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A magnifying glass on library workflows and the move to a digital world

Soutron

Digital Knowledge Services

SOUTRON'S BACKGROUND

Soutron's focus is on special corporate library systems and technologies. Soutron was founded in 1989 by Graham Beastall.

Between 1991 and 2012, Soutron sold systems on behalf of third party software suppliers, to special and corporate libraries. In 2007 it was clear that suppliers were content to rest on legacy code and avoid new investment decisions. Soutron saw this to be an opportunity to create new systems and provide a complete service to clients.

Soutron is committed to develop a new form of library management system with the flexibility to address different needs and concerns of all libraries and knowledge centres. Our goal is to make processes simple to follow and software easy to use for multiple libraries within a single global system.

The Soutron system is robust, proven and in use by over 200 organisations in the UK, Ireland, Canada, USA, Italy, Switzerland, Sweden and Belgium across a variety of sectors.

Clients include large and small organisations that seek to manage their data in a more controlled way with the benefits set out above.

Graham Beastall has worked with libraries and global organisations for more than 30 years to devise systems and solutions to satisfy information management ambitions.

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ENVIRONMENT FOR CHANGE

The transformation in business over the past five years, as a result of globalisation, financial austerity and technology innovation demands a response from the information management community to change practices, revise ideas and develop new solutions to manage information.

The individual is confronted with constant change in the organisation, from technology, political and social situations. Organisations, alert to the environment, have to continually adapt to pressures. The norm is to evaluate new systems, create new tools, adapt and create processes, to be more efficient and be equipped with the right information to make the right decisions in super-fast time.

In this document you will get a perspective on our enthusiasm for digital concepts and digital strategies. We hope that it will awaken your desire to make change happen and take steps to introduce new ideas and benefit from digital technologies.

This is not a step-by-step strategy formulation guide. Nor is it a prescriptive cure to all the problems that a library or information manager might face. Our goal is to present some of the issues that we see facing libraries in the emergent mobile digital age. We make no distinction between types of libraries. All have to face a challenge in the way that they are run and operated and in how information is captured and shared.

> **Digital content has the capacity to remove inequality of information access & increase the pace of learning.**

Digital content, in our view, is the most significant change in information management in the past twenty years. It will revolutionise the way we educate our children, how we introduce new ways to share ideas, capture knowledge and distribute information. It has the capacity to remove inequality of information access and to increase the pace of learning tenfold by use of linked data.

DIGITAL CONTENT: THE WHAT AND THE WHY?

Let's start with considering Digital Asset Management (DAM). It has been around a few years and consists of management tasks and decisions surrounding the ingestion, annotation, cataloguing, storage, retrieval and distribution of digital assets. Typically digital photographs, animations, videos and music exemplify the target areas of media asset management. Adobe Marketing Cloud is an example of the type of solution that provides a complete service for lifecycle management.

> **The transmission of digital content is a natural evolution.**

Different formats of digital assets can be stored within a library and information management system but it is usual that the library is the place to store and manage the final version of a piece of work comprising of many ‘assets’. That piece of work is recognised and published with suitable copyright protections in place and described by metadata to help locate it.

Digital content is a broader term to describe pieces of work that comprise any type of information that is presented in a cohesive digital format. It is a body of knowledge presented in a structured format rather than a component. eBooks have been the format most closely associated with digital content. An eBook moves content from online access to content that is mobile and available across multiple devices, to be consumed, read and absorbed without a live internet connection.

Many different competing formats have been used to produce eBooks. The emerging standard for digital books is ePUB 2. Enhanced publishing formats are appearing in the form of ePUB 3. The transition from paper publishing to digital publishing is slow. There are many solutions competing for a share of the digital publishing market. Using such a format as ePUB makes sharing knowledge widespread easier. It provides an easily accessible platform, through which information can be presented with consistency to colleagues and fellow citizens. It is a foundation stone for sharing knowledge across a digitally equipped society. Society has determined that smartphones are a good thing and that mobile telecommunications benefit mankind. The transmission of digital content is a natural evolution. This is not to say printed material will not continue (just as letters are still sent in the post). The argument is not digital content versus print. It is what type of digital content do we want and how best to create, manage and distribute it.

Sharing knowledge may be built into a corporate philosophy but how to pursue an active knowledge strategy and apply resources in the most efficient way requires continual and constant assessment and input through clear analytics. Libraries need to make decisions about how to embrace this technology and apply it to their environment.

Adopting new systems and processes is not necessarily cost saving. It is likely to require an investment of time and/or money. How senior management perceives a funding request depends upon the research efficiencies, innovation, income opportunities and improved evidence-based decision-making. The very act of presenting a funding request positions the library service and demonstrates that it wants to be proactively at the forefront of change – leading and not simply responding to circumstances.

FACTORS INFLUENCING CHANGE

The UK economy is said to be back to pre-crisis levels (2008). GDP growth is back. Over the past five years, library services have seen reductions in staff and budgets and have been under pressure to deliver and meet or exceed previous levels of work. Where library services embrace process rather than curation, budgets are more likely to be increased, yet is this process examined sufficiently to introduce more radical change?

As the economic environment improves, managers must ask:

- How can the service support growth again?
- How will the service put information into the hands of users?
- How efficiently can the service track and control costs?
- How can information sources be integrated to provide a one stop service?
- Where can the service introduce innovations?
- How can the service become more accessible to more users?
- Are we asking the right questions? Or enough questions?

There is ample evidence of libraries having to repeatedly justify themselves, yet they continue to present themselves to decision makers in the same way as they have done for the past 25 years. The new economic winds will probably not change that, but there are new demands and with them new opportunities:

- The demand to support global activity
- New product development
- New services
- The regulatory environment
- The needs of a new breed of user
- The emergence of super discovery services (Google)

Three decades of intense automation has resulted in vast amounts of published data. Fast internet, Wi-Fi and mobile devices have changed the landscape for service and content delivery. 4G adds to expectations for connectivity to information resources outside the corporate firewall. IT departments have struggled to keep up with desktop browser development. Data remains in database silos, reminiscent of Lotus Notes in the 1990s. Microsoft SharePoint has taken over that role - the corporate standard for document storage and retrieval and as an aid to collaboration.

A new type of information professional is emerging who is excited by the management of information in the enterprise. Columbia University NY has introduced an innovative Knowledge Strategy course led by Guy St Clair, (http://www.smr-knowledge.com) to attract a new breed of information manager, keen to address business innovation. This new information professional sees information as a strategic asset, to be exploited to support innovation and the creation of new value for the benefit of the organisation and its customers. This kind of thinking is becoming evident in the UK where the focus of the library is changing to support decision-making with knowledge services directly supporting front line staff. These initiatives are few and are often seen by others as 'unattainable'.

What these types of initiatives demonstrate is that there are opportunities to improve upon the existing models of library management and the digital agenda, coupled with the need for sharing and collaboration using solid information.

THE DIGITAL CHALLENGE

Digital content presents a new set of challenges and opportunities for library managers. One particular challenge is that of licence complexity, which has held up adoption of eBooks and other digital formats. Licenses aside, the release of the iPad in 2010, other tablets and mobile devices has dramatically changed the levels of acceptance of digital content.

To date, digital solutions have fallen short of being effective for librarians to get value for money when purchasing digital content. Is this because solutions have been designed from a publisher's perspective? Aggregators of digital content have focused on public and academic markets. Subscription based services emphasise wide access to content, but deny ownership of it and attempt lock-in to a particular supplier. Aggregators make money from the sale and licence of eBooks. The library service seeks to target access for their members whether in the corporate or special sector. A library service is uniquely qualified to manage digital content, but it requires a new set of tools.

Library management systems have traditionally been described as integrated: a set of functional modules that share data within a system. The word 'integrated' carries a very different meaning today. Integrated today describes how the library services and systems are connected with third party systems, internal and external to the organisation. It is not unreasonable to expect that metadata should be linked and shareable, both within and external to a catalogue. Move over MARC (MAchine-Readable Cataloguing) catalogues.

The way digital content is acquired, processed and delivered need not be a manual process. Processes can be automated, data sources are external and manual cataloguing is inefficient.

The way digital content is acquired, processed & delivered need not be a manual process.

The word 'library' cries out for a redefinition. It resonates with the idea of a physical space that has stacks of books. Google the word 'library' and the definition is clearly related to physical space and assets:

- *A building or room containing collections of books, periodicals, and sometimes films and recorded music for people to read, borrow, or...*
- *A collection of books and periodicals held in such a building or room.*

  Source: Google

A broader definition might include electronic and digital material in a virtual space and this is increasingly found to be the case as organisations reduce the availability of physical space and remove physical material.

Modern libraries are increasingly being redefined as places to gain access to information in many formats and from many sources. They are extending services beyond the physical walls of a building, by providing materials accessible by electronic means.

A 21st century definition of library might be:

- *An active set of services to aid fast and simple access to qualified sources of electronic and physical material and other data, in a timely, meaningful way to meet individual and organisational goals.*

  Source: Soutron Limited

A GROWING SOURCE OF CONTENT

Digital content is a major content source and is only set to grow. The number of purchases of published eBooks is growing more slowly after a period of high growth. This is essentially because established publishers move very slowly and the methods of recording published sales are related largely to the traditional publishing houses. As ePUB 3 becomes more widely known and understood, new publishers will likely emerge that are focused on publishing eBooks as an integrated multi-media type of content. Users demand information in a format that they can quickly access across multiple devices. They wish to use that data within electronic documents, presentations and emails to respond to their customers.

LIBRARIES AS A SERVICE

The digital library heralds a new era. It needs to be marketed to users as a service, the same as any other service that competes for their attention. Success is driven as much by how easy it is to register, use and have access to services, as by having content delivered in a timely manner to their devices and in a format that is easy to digest. It calls for user confidence to be built through consistent brand messaging, for access points to be developed beyond the idea of OPAC (online public access catalogue), for user friendly terminology and data exchange formats that are easy to follow. Whether it is called the ‘knowledge centre’, ‘virtual library’, ‘digital portal’, ‘first stop’, ‘digital first’ or ‘search portal’, is for each manager to decide dependent on their businesses image and preference. Whatever name is decided upon, it demands a marketing plan as much as a system development and collection strategy. This feeds into a business plan that Senior Management can use to measure the contribution of the digital library service. It also marks out a domain that claims anything to do with digital content is the brief of the librarian. In a corporate setting this crosses into IT and elevates the conversation about how digital content can be classified, distributed and protected.

> **Users demand information in a format that they can quickly access across multiple devices.**

CHOOSING YOUR PORTAL AND DISCOVERY SERVICES

When defining a new service structure, there is a natural desire to find answers to questions as soon as they are placed on the table. Put down all of the questions you can think of first. Do not attempt to answer them at the same time that they are posed. In the same way we categorise content and results to improve how we find a solution, we need to assess questions and determine which are more important to answer than others. This will focus the mind on those questions that need to be answered first. Many questions will be superfluous. Time can be spent on what is important and of priority.

- OPAC or portal?
- What type of data is delivered and consumed by users?
- How can users best access information given the volume and myriad of sources available?
- What other information do users want to manage?
- What type of search works best?
- Should we segregate users and provide discrete portals for each community?
- How are analytics amassed and what measurements are meaningful?
- Who is responsible for integrating disparate systems?
- How can we make it easy for the user to be authenticated outside the firewall?
- How can budgets be managed to avoid maverick spending?
- How do we ensure information equality?
- When was the last time we surveyed user needs and manager's needs?
- Is a change of mental state needed or a physical change or both?
- What motivation techniques are needed to help staff change attitudes?
- Are our skills in need of a revamp?
- Do the metrics we generate today make sense to guide us into the future?
- Are we doing things that we should not be doing?
- Are we using tools and systems because we always have?
- Are we brave enough to change everything we should change?
- Who could we reach out to, to help us make changes happen?
- Are we ignoring opportunities? Which ones?
- Where is our user community? Who can we serve in addition?
- If we added extra resources what difference could we make?
- How could we quantify our net worth to the business?
- What is the annual spend we need to make to deliver the service?
- What would happen if we cut 5% off the annual spend for the service?
- Would it help justify the library service to send to our management a list of everything delivered each month? Irrespective of whether management have asked for it or not?
- If our service were withdrawn today, who would miss us?

Your own questions will come to mind. Take a moment to record them and build up a reservoir of questions about your service. Encourage others in your team to contribute their own questions and use it as a means of identifying the important ones for your service to answer.

> **Creating customised levels of service at the library management level and at the point of service delivery is now imperative.**

GOOGLE-CENTRIC – OPAC - PORTAL

Can your user community be described as Google-centric? Does their information horizon expand beyond a set of Google ranked results? Users emphasise 'simplicity', 'ease of use' and a 'single search', but is it because of their lack of education about search or the pressures that they work under? Is the library made visible within their workspace? Is the user expected to do more for himself? Does he/she have easy access to sources of data or ways to ask for assistance?

Personalised service is expected in society generally. Libraries have for many years sought to have commonality with their peers. This has been seen reflected in the fact that application packages follow more or less the same style and workflows and functions. Irrespective of organisational and environmental change, the same solutions have been sought out. This has been in part, due to the need to seek out peer acceptance and in part because the organisation is unable to define needs due to complexity and inability to express needs in systems terms. Tailoring a library management system to meet a specific library's needs takes thinking time and a level of disruptive thinking that allows descriptions to be translated into systems. Secondly, individual and group needs have been avoided because of the complexity and the expensive consultation or programming that goes with it. Creating customised levels of service at the library management level and at the point of service delivery is now imperative. Why? Because the way in which individuals express their satisfaction is part of the business planning that goes on in an organisation whether by virtue of budget setting, payment of membership fees, or students vocalising their needs better.

OPAC VERSUS PORTAL

OPACs emphasise bibliographic data. Online public access was created in the 1960s to provide the ability to search one type of record stored on computers. Fields were easy to define; author, title, publisher, ISBN etc. Search became simpler because the fields were predictable, limited and without security concerns (no one would wish to limit what a user can search for in a conventional library catalogue). The style and layout of the catalogue display followed the form of the printed catalogue card and citation format.

A search portal however has a much broader perspective. A single search can be made against a variety of types of content with many different fields and very different structures. The catalogue that contains all of the records may contain much more than bibliographic data and data that needs to be secured. Permissions start to be an important capability, so that only those records that are appropriate to a user are made

visible through the search function. The layout, sorting preferences, field displays, fonts and colours all play a part in differentiating one set of content from another.

The search function may be extended to include content from external sources (available via web services or Application Program Interfaces (APIs)). Content aggregation may be an important service objective for the library, in which case connectors and indexes are required together within the internal catalogue.

The display of search results and the formats for presentation are a vital part of user acceptance. Flexibility in layout and appearance is needed to allow fine-tuning to suit a particular user community's needs. This may seem a small thing but experience tells us that display formats can reveal patterns in data, as well as making the data easier to read, resulting in fewer clicks. There is an overhead in setting up such systems but the payback is a more satisfied end user.

It is a characteristic of a search portal, that it is customisable to the needs of particular groups of users who may have special information needs. This may be in terms of; access to specialised content, provision of access to normally restricted content, delivery of feeds or data into a portal, or ways to request access to facilities. There are a variety of ways that predefined searches and filters could be presented as part of the search page options, to guide a user to specific content on specific subjects. A particular type of content being searched for may require a different set of search fields when advanced searches are to be performed. This level of flexibility is rarely found in a conventional bibliographic OPAC.

The device type that users might adopt to access information is varied today. Access on a smartphone in the field or by tablet at a meeting is more common. Thus, the ability to present the search portal optimised for different screen sizes, with a layout that makes handling data easier, is more important than before. This level of customisation requires new technologies to be applied so that there is an automatic recognition of device size.

In summary; search portals place more emphasis on custom services. In terms of content, access methods, internal versus external, search functions and device preparedness. The consideration of using a search portal means a more deliberate analysis of user needs, greater investment of time to prepare systems and selection of systems that allow for customisation without programming.

CONTENT ACQUISITION

A library service historically has developed strategies based on content acquisition, i.e. the storage of materials physically located in the library and owned by the library. This has been overtaken in recent years by subscription-based services, often the result of a move to electronic information. Online content is often characterised by citations to articles in a vast number of published databases, with direct access to full text via a link resolver or via document delivery. Once the subscription to such a service is terminated, so does access to information. Or if access is granted via a copy, it comes with Copyright restrictions and systems are needed to control requesting and delivery.

Content acquisition plays an important part in library service by ensuring continuity of access and the ability to share content with a user community. But it is undergoing its own transformation. Book stacks are no longer the defining image of a 21st century corporate library. One might make a comparison with card catalogues in the late eighties and early 1990s. The card catalogue may still have existed, but online catalogues were replacing them very fast. The digital library requires only knowing the whereabouts of the material on a computer network and if content is in physical format, it can sit in offices or personal collections just as easily as in a central stack. Providing the library knows where the item is, a physical central presence is increasingly less of a requisite. The library exerts control over acquisition and expenditure and makes ordering and distribution efficient.

> **Indexing by subject or abstracting adds value for users who otherwise may not find content from a basic citation.**

Original cataloguing is fast becoming redundant for published content. Metadata can be easily downloaded from a variety of sources. Indexing by subject or abstracting adds value for users who otherwise may not find content from a basic publisher's citation. Thus, the places where original cataloguing is performed are fast disappearing. Pressures on time and staffing and the need for streamlined processing of content to reduce costs are among the factors at play.

Expanded library services need database technologies that are flexible and sophisticated. Libraries have a wide cross section of demands that are not bound by bibliographic data. This requires a database that can easily be amended by staff within the library to add fields, create record templates and design new search portals to address specific types of content. The added-value this provides might include knowledge services, managing images, multi-media, archival materials or a skills register. Content for these may well be acquired through downloads, user input or be ingested from in house sources. This data is unlikely to be from published sources.

ACQUIRING EBOOKS

To date, eBooks have largely been copies of the printed text. They vary little from the printed work and are without enriched content. Any book that has charts or other challenging content to format tends to be left alone because ePUB 2 cannot manage this type of formatting. ePUB 3 standards will change this and as we move into 2015/2016, more ePUB 3 materials will find their way into the market. ePUB 3 will release a new wave of creativity in how content is described and delivered.

Publishers have naturally sought to protect print revenues. eBook distribution has been focused on business models that support use in a ‘public library’ or ‘academic library’. Provision is through aggregation services such as Overdrive and other proprietary platforms, where subscription and a complex form of credits are employed to negotiate usage. Comparisons of eBook costs are difficult to come by and the licence models make it far more complex to administer than the original print resource.

A digital library calls for linked data. ePUB 3 will introduce more combinations of content. In January 2015, Harper Collins announced that all eBooks will now be produced in ePUB 3 format. The catalogue for a digital library needs a different structure to exploit the capabilities of digital formats and changed workflows. The library system has traditionally been divided into modules – functions that support particular areas of library work. These modules were made to share data between one and another. Today integration is much broader; it requires third party applications to be integrated into a whole – a praxis for information.

In the future we envisage that elements within a digital piece of work may connect to other data elements. This is in addition to what is perceived today with ePUB 3. Integration with third party systems will deliver efficient and flexible processes for acquisition, loan and protection of digital content through digital rights management (DRM). This requires new ways of thinking about sharing content. Materials that are normally found in a library will expand to all manner of formats and types of content. It opens up a need to securely distribute selective content to memberships, special interest groups, project teams, management teams and board members on desktop and mobile devices. The unbundling of content and the growth of tablet and smartphone usage make the library environment more challenging and demanding for all who are associated with document creation, publishing and security.

What service to provide? What do users expect from their library service? Surveys will help, but often until the service is there the need for it is unapparent. What is clear from anecdotal evidence available from special and corporate libraries is that the physical loan of material is declining. There is an increase in expectation, especially amongst younger staff members, for digital content and mobile access – access outside of the corporate firewall because their jobs require them to be either amongst clients, in the field or moving between locations. The library has to take itself to its users. It needs to create a mobile presence that is as obvious to users as the physical library was 50 years ago.

POINTS TO CONSIDER

Decision points around managing digital content:

- How to acquire digital content? Subscription, rental or perpetual licence?
- Use third party digital platform(s)?
- ILS (integrated library system) to incorporate a digital platform
- Protect digital content using DRM?
- Unbundle digital content?
- How to manage and protect internally produced digital content?

Search portal technology placed in the control of the library provides flexibility & the means to market their services.

DISCOVERY SERVICES

Discovery first appeared in 2009 when universities sought to provide a search for known items, finding the citation for an article or book that could then be checked against local holdings. The goal was to provide a single comprehensive search. Each discovery service introduced, such as Summon, Primo and EDS offered collections from many sources but never all of the same ones.

After five years the results have proved promising. According to statistics, usage has increased. But are discovery services the best means of promoting the library? What does the library need to fulfil its needs? Is discovery, as some observers state, merely a step towards the demise of search in the library – a precursor to fulfilment services only? Should the library instead invest in technologies that present their services better and provide uniform access to all of the types of content that they manage? How should services be presented to different groups of users across the university and to multiple sites – local and remote?

Search portal technology placed in the control of the library provides flexibility and the means to emphasise the services that the library wishes to market. What amount of space should be given to search compared to service promotion? How the pages are laid out and presented with added value options has never really been examined in any depth to our knowledge. Lots of links to resources and feeds are presented, but advertising of specialist services is usually consigned to a small corner of a page. There is a great opportunity to better exploit the space available on the search portal homepage. Your objective may be to present a single point of resource discovery, where emphasis is on 'discovery' to represent the library service. More could be done to push the 'library first' idea and all the services the library can provide.

> **A library that does not take advantage of copy cataloguing from an authoritative source may be ignoring a major productivity aid.**

Flexibility and control over search pages together with fulfilment options for print and digital are the backbone of library technology. It puts the library firmly in control of presenting itself and information to staff or customers within or external to the organisation.

DATA TRANSFER AND INTERCHANGE

A library that does not take advantage of copy cataloguing from an authoritative source may be ignoring a major productivity aid that allows the library to refocus attention to higher return tasks. Whether that source provides MARC data or XML data does not matter providing the metadata is accurate and rich. Digital eBooks are presented with data from publishers in ONIX format (XML) and is then transferred into MARC formats to send out to libraries. Aggregators spend little time on the metadata and alternative sources are likely to prove more suitable for populating the catalogue.

The desire amongst library qualified staff to protect data accuracy and transfer data between systems has in the past resulted in an adherence to MARC based systems. MARC has now been declared 'dead' by the Library of Congress, as it is outdated and does not deliver in a digital world. XML structures allow far greater opportunity for data exchange, transformation and integration between systems. XML may still not be taught in library schools because it is seen as an IT construct, however mastery over this technology gives the library more opportunities. For example, an XML based system such as Soutron Library System can be used for other applications, adding value to the library service.

Similarly library specifications created in 2000 are still used to define requirements. They refer to Z39.50 – a protocol developed when the web was not heard of. Z39.50

does not use HTTP or HTTPS to transfer data between systems. Application Program Interfaces (APIs) are the preferred technology today to connect into different and disparate systems, together with web services. Both of these protocols are using XML as the standard data exchange mechanism - the protocols that all IT systems use.

DO WE NEED FLOOR STACKS IN A DIGITAL WORLD?

For some areas e.g. science and management, paper based materials are still important, as the core body of knowledge does not change that much over time. However the physical space to store such materials may be prohibitively expensive and the costs associated with handling paper and transporting it to where it is needed, is likely to be an inhibitor to rapid access. In a digitally mobile environment, material can be embedded in the database record and immediately accessed from any location by any mobile device.

> **From the first IBM PC AT that was released in 1984, it was inevitable that library services would change.**

The ways in which people work, perform research and study today are much more collaborative. Learning and finding breakthroughs may still be a solitary activity (the scientist in the lab until the early hours of the morning) but industry and commerce rely on people putting their heads together to fast track ideas and develop new products and services. Thus, the library may gain more from making possible that physical collaboration than offering rows of book stacks, no matter how impressive and attractive they might be.

The flexibility of a database is replacing the floor stacks that once offered the flexibility to shelve material and allow physical browsing to take place. The ideas are similar: structure, storage, organisation and classification, but the physical is replaced by the digital.

TECHNOLOGY PERSPECTIVE

From the first IBM PC AT that was released in 1984, it was inevitable that library services would change. Soutron has been at the forefront of that change and has helped thousands of libraries automate their tasks and meet fresh challenges, by developing technologies and functionality that are simple and easy to use. In 1995, we introduced our first web based search tool. Today, we are helping clients make the transition from the physical to the digital; from a presentation style built on traditional library OPACs to a portal style of discovery and presentation that can cross multiple devices and provide a single place to find information. The systems we develop include processes to

manage information using efficient workflows to capture, purchase, receive and disseminate content.

Systems created in 2001, using the first release of Microsoft.NET, saw the first fully web based library systems appear. 15 years on they are very old. Not only because improvements in the way systems can be built and managed has meant new programs and development tools but because such systems were primarily MARC based. In 2007 we anticipated that digital was soon to be upon us and that access to digital content through web browsers, from any location, would become the norm, particularly as bandwidth speeds would increase and so too availability.

Significant new investment to innovate and build anew was made available within Soutron. The result has been 7 years of continuous investment. Now in 2015 a second round of investment is driving new digital initiatives that support mobile use.

Few suppliers post 2007 were keen to invest given the austerity measures being applied across the economy. We took this to be an opportunity.

A different landscape exists as we go into 2015:

- Web technology is advancing rapidly
- Mobile devices have different size screens
- Increased availability of managed hosted servers and cloud services
- Internal IT support and system management overheads are too costly
- Workflows and processes are constantly being simplification
- There is greater demand for flexibility to respond to new needs
- Integration with other systems is imperative

As a supplier we acknowledge the fact that we have to continually invest in the most up-to-date technologies to keep clients at the forefront of the industry. Soutron technology is combined with our commitment to personal service and attention to user needs. Soutron technology simplifies operations; requires fewer overheads to manage; is easy to upgrade and takes advantage of all the new facilities we add into the system. The technology base on which we deliver systems allows more to be done than with older and conventional systems of the past.

DOES DATABASE CHOICE MAKE A DIFFERENCE?

The starting point in any choice of a system is the flexibility of the database. It must have relational capabilities and be well supported. A long-term future is an absolute for a repository of any kind and one that has transactional integrity and scalability built in. A database that is going to be developed and supported for many years ahead is important.

Soutron uses Microsoft SQL Server. There is no need for a database administrator or any concern as to the size of the database or indeed the number of users that might access and use a system. Equally important is the built in indexing within a database. SQL has a full text search index that means that no third party systems have to be added in, which otherwise adds to complexity.

Flexibility is important because the move to digital means that the record templates and structures for recording metadata are no longer based on bibliographic records alone. Older systems were concerned with physical books and print journals. The library of today needs to be a repository for all types of metadata, including digital media such as electronic documents, images, know-how and access to online sources. Freedom to have forms that match user needs, have field choices and match data being held, whilst not require training, are essential. Any type of information should be capable of being managed in the database.

> **The library of today needs to be a repository for all types of metadata, including digital media.**

It is important that the database is relational, in order to easily cross reference and link assets, so that finding information, which is related to another asset, can be easily carried out. Some systems implemented on SQL databases do not exploit the power of the RDBMS (relational database management system) and instead transfer the flat file legacy system structures onto the new database. It perpetuates complexity and does nothing to bring efficiency and order to a knowledge set and may inhibit system development.

Finally, the system and database must be capable of being configured without the need for in-house IT expertise. The database attributes should include:

- Full text indexing
- Storage of digital media
- Be easy to administer
- Real time updating

- Online 24x7
- Automated backups without affecting operations
- Task services to schedule notices and reports

Some clients store and manage metadata and links to attached or uploaded documents, whilst others are seeking to manage structured content from a document within a record. Content that might have been originally created in Word documents and converted to PDF, attached to records and then downloaded by users is likely to be seen as too limiting in the future. Our work with clients on an innovative collaborative project called MEDIA (Metadata Encapsulation for Digital and Information Assets) addressed the problem of presentation across multiple devices without the need for an application to be downloaded to a device. Instead, using HTML5 and the latest Microsoft.NET technologies, access is provided via a tablet and the application can size to the device, making it easier to navigate and read. This provides much greater control over content and protects an organisation from having data downloaded and shared without approval. Where images are being managed, these can be processed to record their origin and ownership using steganography techniques.

WORKFLOWS AND EFFICIENCIES

Libraries need to reduce manual effort.

Over the past few years we have put our magnifying glass over different areas of the library's workflow and broken down the tasks into simple yet flexible processes. It is a very deliberate process within Soutron. When a client shows us a particular pressure point in their operation, we put it through a close examination to work out a more streamlined process and diagnose how to improve that aspect of operations. This advances our system in ways that are practical and efficient and allows us to respond to specific needs of clients within a single fully maintained system. Our deliberate personal approach is one of the reasons why librarians like using Soutron. Only by collaborating and putting our people who can design and make decisions into the field to work with libraries do we make the right changes. This proximity of supplier and library is a crucial factor in the speed of development and operational efficiency.

FUTURE DIRECTIONS

Soutron has twin priorities: search and back office workflow.

We believe both are equally important. Both areas need to address the move to predominantly digital content.

IMPROVE WORKFLOWS AND BACK OFFICE FUNCTIONS

Efficiencies in processes make staff more productive. They make staff happier and less frustrated. It frees up thinking time when the workload is efficiently processed.

Many libraries operate in traditional silos where specialisation is based on task. At Soutron we have moved beyond this view to a more holistic systems view of processes. A user of the system should be able to process any data in any part of the system and perform an end-to-end task. The end result is a more flexible staff complement whose understanding extends beyond their own individual set of tasks.

SEARCH

A new and very flexible search and discovery interface (search portal) is introduced for 2015. This provides complete control over the look and feel and the layout, not only for the homepage but also the results pages. Library services can be promoted from internal or external sources and the results can be laid out to present information clearly and appropriately for the type of content. All types of content can be presented through the portal.

Users logging on via single sign on (SSO), benefit from a more individual experience, based on metrics gathered from their profile activity and preferences. Collections of content might be common to all users or specific to particular users. When searching is performed, the system tracks activity and logs it for later analysis.

An API is an essential pre-requisite for any database application today. The API in Soutron is a RESTful API that produces XML that is straightforward to control and manage by a webmaster. It might be needed for those who wish to have a completely tailored search function that is entirely under their control, (www.iser.essex.ac.uk) or the organisation's own publications are published to the web.

MANAGED HOSTING SERVICES AND SECURE ACCESS

> **Hosted platforms make the library service more independent, lifting restrictions on policies, resource levels & IT priorities.**

Mobile technologies are shaping how people come to use systems. Soutron is a managed hosted application on servers outside of the corporate network. All that a user needs is a PC or device, with an internet connection and a web browser to enable them to connect from anywhere in the world to up-to-date data. This simplifies all aspects of deployment and upgrades. It also means that data is very secure. No longer is the organisation exposed to internal IT being able to access any system on the corporate network.

All access is logged, controlled and measured and that includes access to documents on the system as well as downloads and searches. The repository also becomes a safe place for the user to submit content and know that it is accessible, searchable and secure. This brings back into focus the need to have a database that is designed to be flexible and built with a security permissions model that is equally flexible with granular integration into a search portal that can be configured to meet the different needs of users.

The use of a hosted platform makes the library service independent and it is no longer restricted by policies, resource levels or priorities set by IT. From IT's perspective it is an application that is best managed and supported outside of the main network pressures and as such, allows support services to be called upon without hindering IT's own priorities.

The budget for infrastructure is made predictable:

- A single annual fee encompasses all aspects of the system, hardware and service
- A single telephone call or email to request support.
- The system is available 24 x 7 x 365

CONCLUSIONS

Knowledge is a strategic asset and its availability in digital format empowers people and creates a more efficient business and learning environment.

A digital library service can transform the way that people learn and use information. It can be achieved now using better library management tools and using delivery platforms that are designed for the digital age.

Metadata comes in a variety of forms and is an underused asset in most organisations, mainly because the strategic value is hidden and is inaccessible. Older legacy library systems have no concern for this but instead seek to rely on bibliographic record structures incapable of managing a broader set of data. Soutron breaks free from these pre-dated boundaries and prepares a library for a world in which linked data is readily consumed and expected to be available.

> **Knowledge is a strategic asset. In digital format it empowers people creating a more efficient business & learning environment.**

Costs can be controlled and budgets managed more easily in an integrated system that provides fund accounting capabilities. An organisation needs assurance of data security and a knowledge of who is accessing the enterprise assets. This is in many ways more important than cost management, but it is only available in systems that have built in metrics available to measure compliance.

The re-use of applications simplifies the overheads of a business and the flexibility of a database that manages knowledge as well as digital assets can be as vital to the health of the organisation as the company accounting system.

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