Future proofing the library

By David Feighan

Introduction

Library catalogues are going through a major period of change. In particular; more library content is going online, and students and staff expect a Google like experience. School libraries, and the systems they use, also need to respond to the opportunities and challenges outlined in landmark reports such as the **Horizon Report for K to 12** and the recent **IFLA Trend report**. Library systems also need to respond to the **move away from MARC** towards **RDA**, and **the brave new world of linked data**, collaborative collections, and access to, rather than ownership of, content (This includes distributed collections within library consortia as well as lease or rent access instead of outright purchase. An example of the latter access would be **EBL's non-linear lending access model for eBooks**. In addition, school libraries need to be aware of new vendors products that offer online text books as well as fiction and non-fiction eBooks, and that potentially bypass the library altogether. As a result, the traditional school library catalogue, with a focused on lending physical items, and that stood alone not communicating with other library vendor or school system, is near the end of its life.

To stay relevant, many of the larger school libraries are already moving towards the next generation of library catalogue, or to be more accurate, Integrated Library Management System or ILMS. This paper is not a review of the various catalogue systems on the market, nor does it set out to recommend one system over another. Rather, it outlines the sort of things a school library should consider, and indeed insist on, from their vendors to ensure they future-proof their library service. Many of the future trends in school libraries start in the higher education and public library sectors; therefore this paper deliberately refers to practices and trends that are already in place in other types of libraries. The focus however remains on how the library catalogue supports learning, literacy, and broader reading. In addition, there are new skills and terminology school libraries will have to understand and embrace. For the foreseeable future, the physical collections in a school library will still have a place, but library staff will need to understand and manage: discovery layers, single sign on, federated searching, URL resolvers, and digital rights management, to name but a few. Libraries will increasingly need their ILMS to be interoperable with other school collections, the collections of neighbouring libraries, and national resources such as Trove from the National Library of Australia.

At their most basic an integrated library management system, or ILMS, does three things:

1. Provides stock control – what the library holds in its collections,
2. Manages library patron details – who can borrow what and for how long, and
3. Manages circulation – who has what at any given time.

As we move towards more online content this basic functionality remains important. Libraries may increasingly lend more ebooks, but a loan remains a loan, and a patron remains a patron. What is changing is the additional demands of managing the digital rights, especially as ebook pricing is often linked to rights management and as yet there is no uniform practise. To date, publishers have a variety of pricing and access models, in part because they are still working out sustainable models as they move to more online content delivery.

In addition, even though a school library may not necessarily use all of the following functions, a traditional ILMS should also be able to:

1. Manage reservations (next in queue) and bookings (point in time reservations).
2. Overdue and fines.
3. Acquisitions workflows and library budgets.
4. Periodicals and subscriptions including claims for missing copies.
5. Reports, especially reports that deal with circulation, collection development, patron demographics, budget and order details.

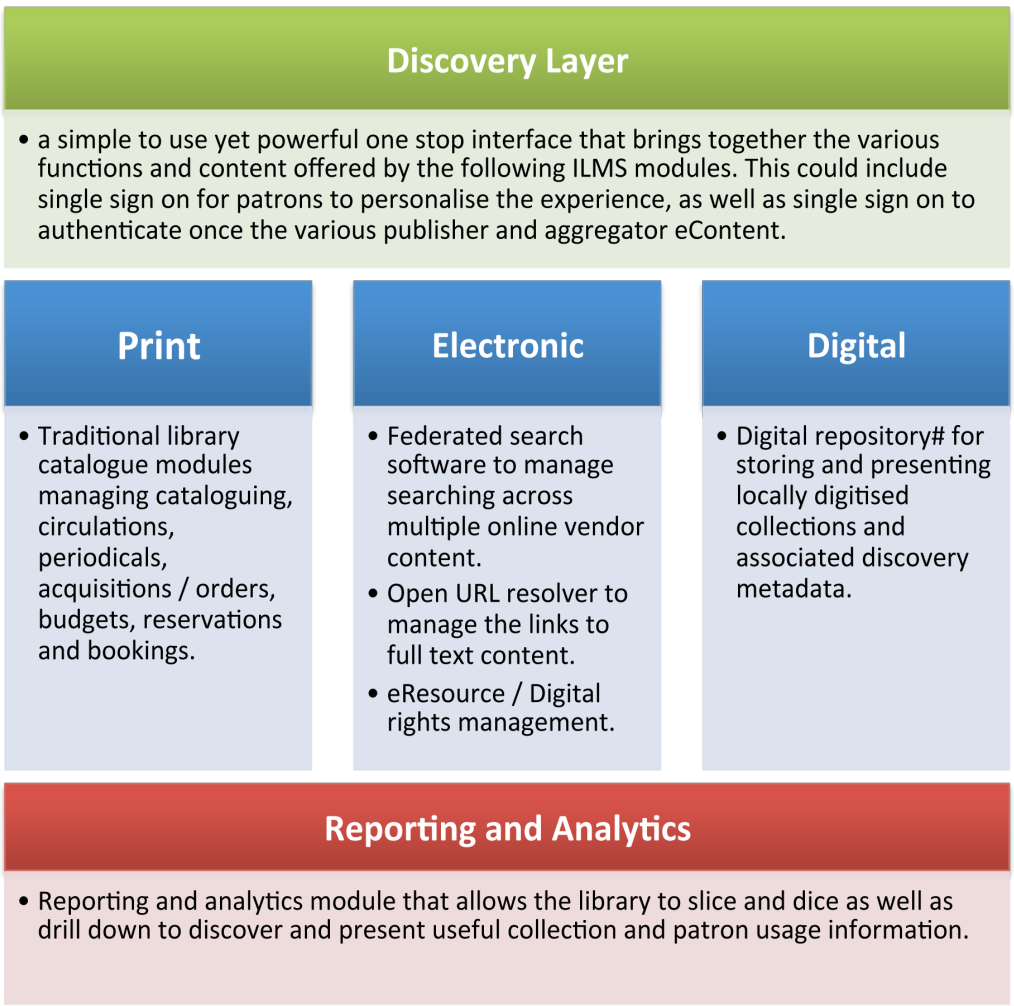
This functionality should be standard in any good traditional ILMS, however increasingly an ILMS needs to:

1. Look after digital rights management, and provide …
2. Seamless single and secure sign on 24 / 7 from home as well as on campus while coping with the access terms and conditions outlined by individual publishers and content providers.
3. Offer Google like searching with autosuggestions and corrections.
4. Offer faceted search results so users can quickly drill down to the results they need.
5. Offer single federated searching across multiple sources and collections from other libraries. This is discussed in more detail further on.
6. Offer deep searching within, as well as across, the full text from multiple suppliers. The universities are already offering library discovery layers that include services such as **Serial Solutions' Summons**, **Ex Libris' Primo** and **EBSCO's Discovery Service**.
7. Offer enriched content on the fly such as book covers, trailers, reviews and folksonomies. Examples include the 'Librarything for Libraries' folksonomies and **Syndetic book covers that populate on the fly into catalogue search results**.
8. Work with Social Media. For example, embedding the ILMS discovery layer into Facebook, or allowing persistent links to micro blogging services such as Tumblr and Twitter.
9. Work with QR codes so school libraries can introduce the 'Internet-of Things' and integrate their online collections into their physical spaces (Feighan, 2012).
10. Cope with patron expectations for individual personalisation. This includes the ability for patrons to set up their own preferences, favourites and recommendations. Or in other words Amazon like functionality.
11. With the emergence of 'Big Data'. For example, every NASA photo is being made available online, and governments around the world, along with their associated cultural and scientific agencies, are making huge authoritative datasets freely available. The ILMS of the future should be able to bring in on the fly authoritative content from trusted big data sets. See **http://www.data.gov.au**, **http://www.data.gov.uk**, **http://www.data.gov** and **https://data.govt.nz**.
12. Work with the semantic web and linked data.
13. Work with multimedia and non-texted base information.
14. Work on mobile devices such as tablets and smart phones.

Much of this functionality already exists and is already is being used by libraries, especially those in the higher education sector. However, for the functionality to work it also needs the input of school librarians who can understand and work within both the existing and emerging library and publisher standards. It has also resulted in the next generation ILMS using a new type of structure.

New expectations demand new ILMS structures

With the move to more full text content the modules and structure of a library ILMS are changing. Following is generic layout of the new generation ILMS. The modules found in a traditional ILMS still exist but they now form part of a larger more complex system.



There has been a big push in the higher education sector to create digital repositories to capture the published output of the institution. In the school sector such a repository can be used to digitise and preserve the school's cultural identity and artefacts. Potentially these digital objects can be reused as part of the learning process. For example, students learning about World War I, or the Vietnam War can access and use photos and letters of what students at their school where doing at the time and how these events effected their own school community. Digital content could also include video and sound recordings.

Library standards

Library catalogues are no longer stand-alone systems. Increasingly libraries have to integrate their catalogue into the services offered by the various online content providers as well as other print collections. As a result, you need to choose a system that is fully compliant to library standards. To this end the ILMS should be:

- SIP2. As more and more school introduce eBooks services such as RFID patron self check-in and check out, it is critical that your ILMS works with the Standard Interchange Protocol (SIP2) or NCIP standards. **SIP is the communication standard that links library catalogues to eBook platforms as well as RFID kiosks.**
- **MARC and z39.50 compliant**, and also **http://www.niso.org/standards/resources/Z39.50_Resources**. This allows your ILMS to use the same metadata data structure and protocols as the rest of the library community and many of the library vendors. For example the metadata in many of the full text databases from EBSCO, Proquest, Gale and Infotrac use the same MARC metadata structure as library catalogues. This goes back to the days when large US libraries wanted to integrate their full text databases into their green screen text based OPACs. While there is considerable **debate regarding the future of MARC**, libraries have a huge and long-term investment in this data structure so it remains important for the foreseeable future. For example, **in May 2013 the two billionth holding record was loaded into WorldCat**. This is **one reason why the move to RDA** has taken so long.
- RDA: **After a long rollout process RDA** has now been adopted by the wider library community. As a result it is also important to choose a catalogue system that can work with the new RDA data structure. **At its simplest RDA gives library catalogues the flexibility to better handle the multiple formats now found in collections**. For an ILMS this means new data fields need to be made available in the

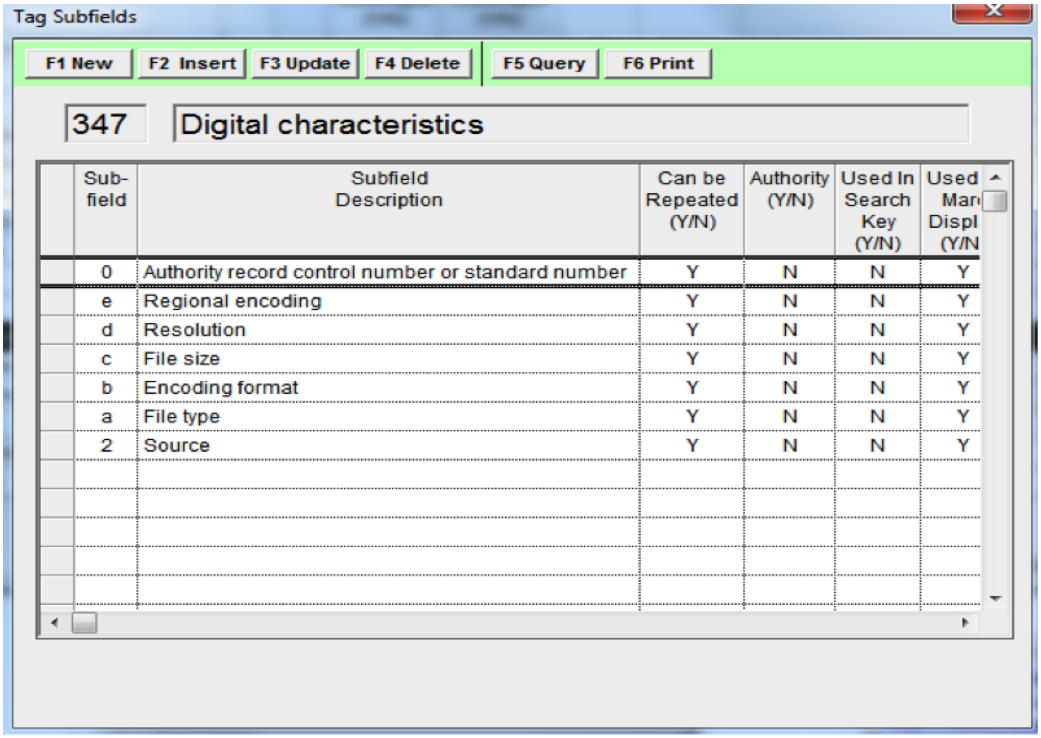
cataloguing module, and libraries also need to be able to import the RDA metadata from cataloguing sources such as SCIS. Therefore RDA fields such as:

'245 00 |a Avatar |h [videorecording]

would be coded according to RDA as:

245 00 |a Avatar
336 |a two-dimensional moving image |2 rdacontent
337 |a video |2 rdamedia
338 |a videodisc |2 rdacarrier' (SCIS edublogs, **http://scis.edublogs.org/2010/09/13/rda-changes-from-aacr2**)

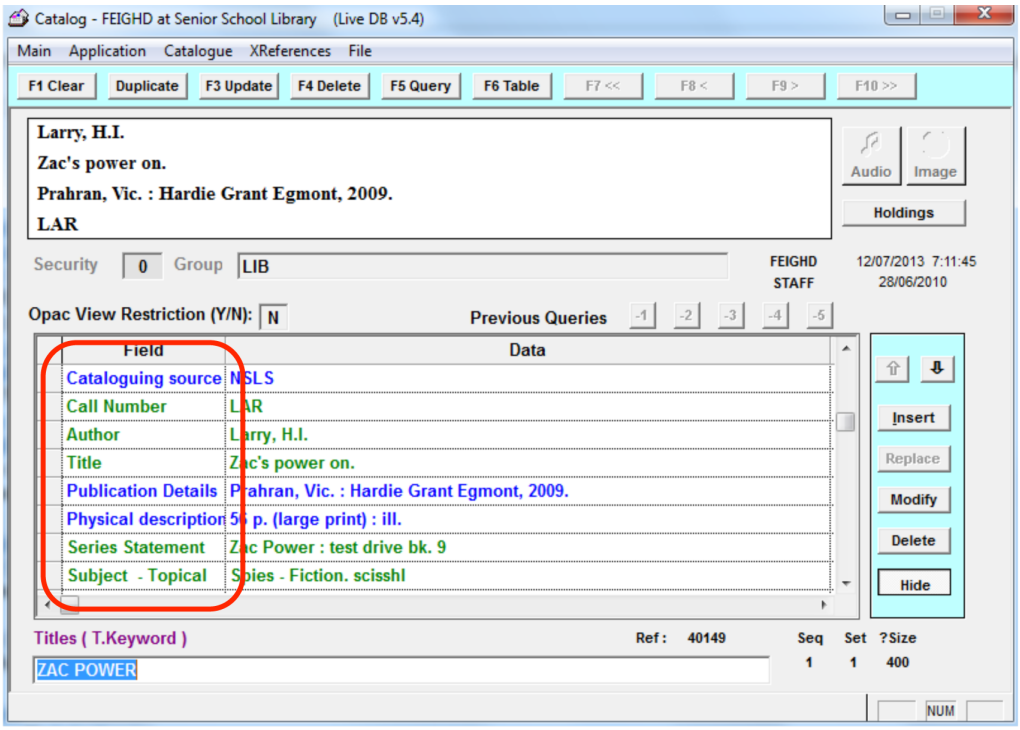
Like many other schools, the Bialik College Library has a large number of specialist DVDs that have only been released in Zone 1 or 2, and have to be bought from the USA via suppliers such as Amazon. So when we added the RDA fields to our catalogue in 2013 we also took the opportunity to include **regional coding information into the new MARC 347 field**. Previously this information had either not been included, or it had been added as non-standard free text in the MARC 500 general notes field. By including this information in a consistent and standard way, and working within the library standards, we will have better control and insight into these important resources. See following for details of our catalogue module's back end settings for the MARC 347 field.



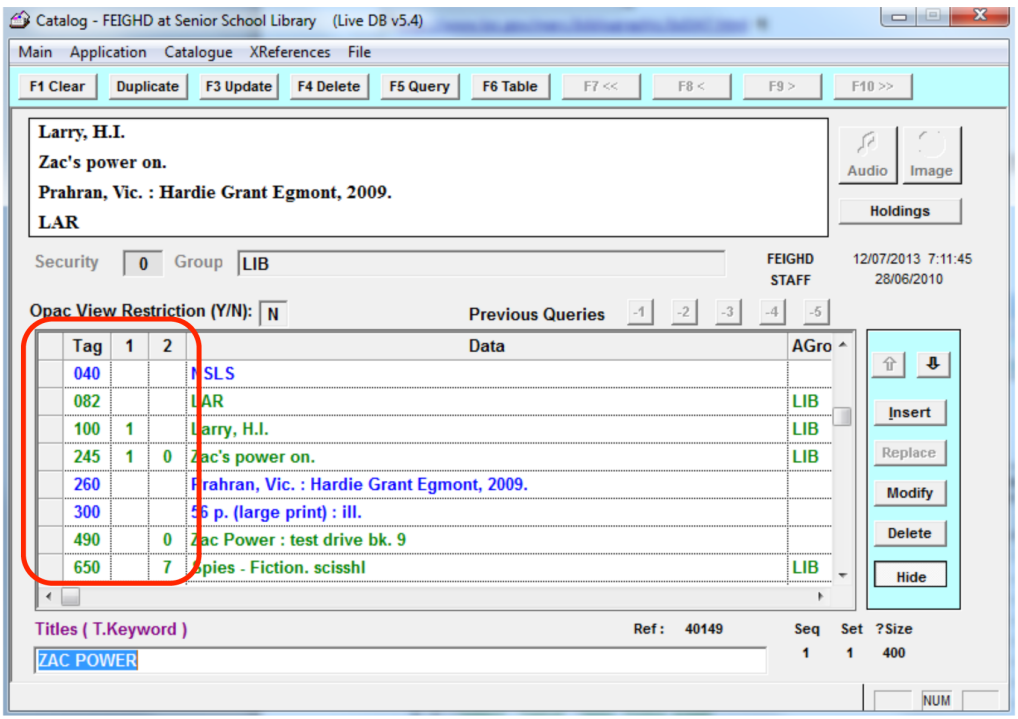
Your library may not need to add a MARC 347 field but the important thing is that you choose a system that does not lock you out of working within the library standards.

- Proper Catalogue worksheet display. Further to the point of choosing a system that properly works with library standards, it is often useful to ensure the cataloguing module includes a MARC worksheet that displays both the field codes as well as the field descriptors. As we integrate more with third party vendors, work with different types of formats, and deal with the introduction of new RDA fields, it is import to know what you are looking at when uploading content metadata into your collection, especially as this can have a very direct and profound impact on the ability of students and staff to find resources in your collections. The following is a case in point.

  The following catalogue module views show both the field descriptor . . .



and can toggle to the MARC coding display.



There are many **MARC fields, most notably the 500s**, where there are many different types of fields. In the case of the 400s, there is the 490 'Series Statement' and the 440 'Series statement added entry'. Confusing the two impacts on how series information is presented to your patrons. For example, the first following screen shot is from a school library OPAC that has a mix of 440s and 490s. **The 440s have not been removed even though this field was made redundant in 2008** . The second screen shot is from a school that has cleaned up the series MARC fields information. Both examples use the SAME catalogue system and a similar Web based OPACs.

Library A. search results for a mix of 440 and 490 series records that have not been cleaned up.

11 subjects found for zac power.

1. Zac Power. (21 entries)
2. Zac Power. Extreme mission ; (4 entries)
3. Zac Power. Extreme Mission ;
4. Zac Power. Extreme missions / by H.I. Larry ; illustrations by Cal Bennett, Damien Holder & Andy Hook.
5. Zac Power. Mega mission ; (3 entries)
6. Zac Power Mega Missions.
7. Zac Power : Spy Camp. (4 entries)
8. Zac Power. Test drive ; (24 entries)
9. Zac Power : the fear files : Horror house ; Thrill ride / H. I. Larry ; illustrations by Ron Monnier, Andy Hook.
10. Zac power. The special files ; (2 entries)

Library B. search results where the 440s have been purged and the 490s correctly entered.

5 series found for zac power.

1. Zac Power : classic (28 entries)
2. Zac Power : extreme mission (8 entries)
3. Zac Power : mega mission (4 entries)
4. Zac power : spy camp (18 entries)
5. Zac Power : test drive (25 entries)

What should be immediately apparent is that the second screen shot clearly groups the books in the proper series. This clean-up was possible because the ILMS (A.) differentiated between the 440s and the 490s and did not use a generic series field, and (B.) displayed both the MARC field descriptors as well as tag codes within the catalogue module so the library staff could see what they were doing during the clean up. This is not cataloguing for cataloguing sake. A library catalogue should make it easy for people to find information it should not create obstacles to finding information. If a school library wants to support reluctant readers, and a reluctant reader has found a series they are enjoying, it is important for the library makes the series information as easy as possible for the reluctant reader to find and use. This includes correctly dealing with the $ subfields. In the case of the 490s the $v subfield gives the 'volume' or the number of the book in the series. The lesson here is that even when you have a good ILMS you still need to enter the metadata correctly to ensure the system works in a way that supports your students and staff. What this means is that when the student clicks on the series record for Library A they cannot see which book comes first second or third in the series, while in option B they CAN see which book comes first, second and so forth. See following for details.

Library A. detailed results display for a mix of 440 and 490 series records with the $v information not displaying so it is not possible to see which book come where in a series.

1.

Dark tower / by H.I. Larry ; illustrations by Cal Bennett & Damien Holder.
Author: **Larry, H.I.**
Call No: **LAR**

Item Type: Fiction Book
Status: Available
Home: Junior Library
Currently: Junior Library
Reserves:0
Due Back:

Reserve Item

More Information

2.

Ice patrol / by H.I. Larry ; illustrations by Cal Bennett & Damien Holder.
Author: **Larry, H.I.**
Call No: **LAR**

Item Type: Fiction Book
Status: On Loan
Home: Junior Library
Currently: Junior Library
Reserves:0
Due Back: 19 Sep 2013 11:59 PM

Reserve Item

More Information

Library B. detailed display where the 440s have been purged and the 490s with the $v subfield is entered correctly and therefore shows the order of the books in the series.

1. Dark tower.
Larry, H.I.
Prahran, Vic. : Hardie Grant Egmont, 2009.
Zac Power : extreme mission bk. 2

More Info [via Amazon.com]
More info via Syndetics.com

Call No:	Type:	Status:	Reserve Title:	Location:
L	Book - Fiction	Available with 0 reserves	Reserve Title	ELC LIBRARY
LAR J	Book - Junior Fiction	Available with 0 reserves		JUNIOR LIBRARY

2. Ice patrol.
Larry, H.I.
Prahran, Vic. : Hardie Grant Egmont, 2009.
Zac Power : extreme mission bk. 3

More Info [via Amazon.com]
More info via Syndetics.com

Call No:	Type:	Status:	Reserve Title:	Location:
L	Book - Fiction	Available with 0 reserves	Reserve Title	ELC LIBRARY
LAR J	Book - Junior Fiction	Available with 0 reserves		JUNIOR LIBRARY

So, if your existing or new ILMS cannot properly handle library metadata, and work within the recognised industry standards, you may compromise the ability of your patrons to find what they are looking for as well as limit your ability to integrate your online and print collections.

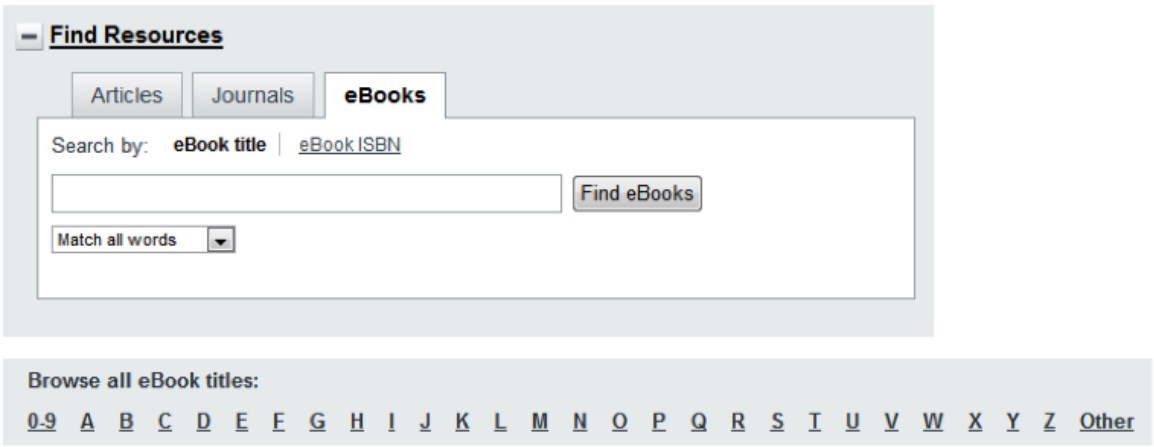
Patron centred discovery

The focus of any school ILMS should be that it is a powerful yet easy to use search tool that brings together all the online and print resources in a library's collection. Therefore the ILMS discovery layer should be web based. Your vendors should also be able to demonstrate how they are moving towards supporting **emerging web standards such as html5**. For an easy to understand list of reasons why html 5 is important go to **http://tympanus.net/codrops/2011/11/24/top-10-reasons-to-use-html5-right-now**. In addition, the patron interface or discovery interface should be able to do the following:

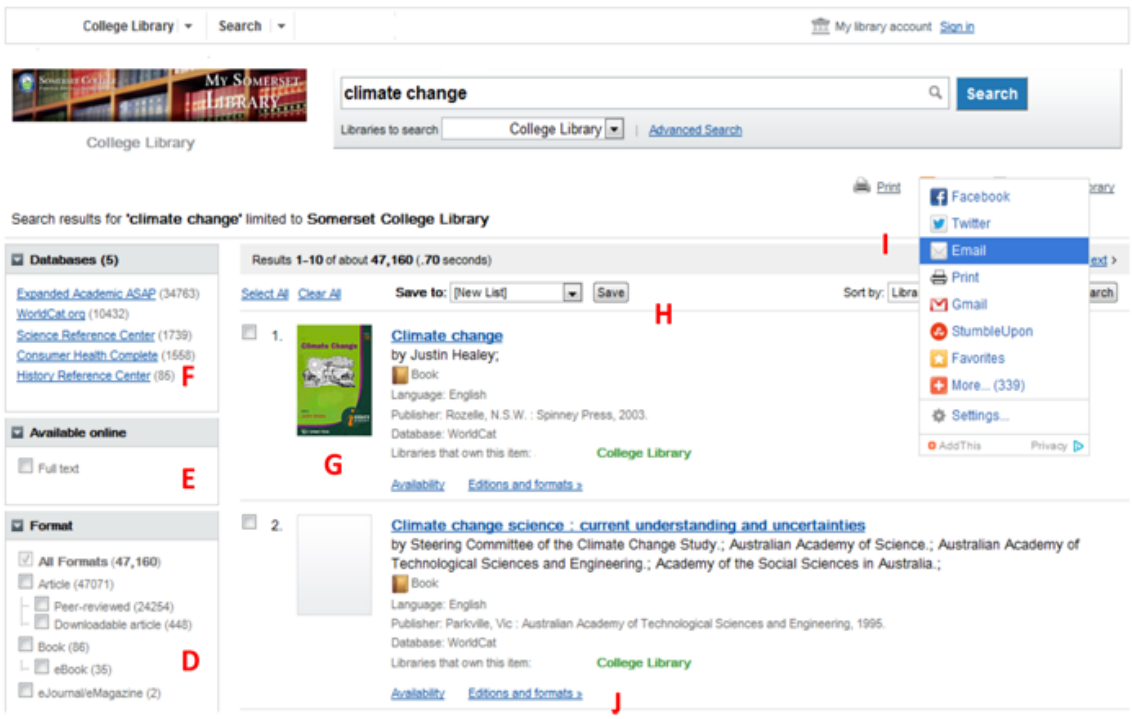
A. Like Google, prompt for spelling mistakes and offer suggestions as the patron starts to type a search term.

B. Offer the ability for library patrons to sign in to save searches, create preferences and alerts, and modify the search settings to suit their own individual needs.

C. Offer an A-Z list for magazines and journals as well as journal articles, and comes with **a URL resolver** so patrons can quickly and accurately browse and source content from multiple publishers and database providers. See also the following image for details:



A forward looking discovery layer shoul also be able to:



D. Present faceted search results so patrons can drill down by facets such as author, date published, subject, language, audience and so forth.

E. Limit to full text resources. Ideally this should include ebooks and eJournals and even the library's own in-house digital repository collections. This is particularly useful when students and staff are access the library's resources after hours or from home.

F. Limit by publisher and or aggregator database.

G. Allows the library to present book covers within search results.

H. Allows staff and the students to create, as well as save and share, their own searches and search results.

I. Give you the option of integrating with the social web: e.g. Facebook, Twitter, tumblr.

J. Bring together multiple editions.

In addition a discovery layer should be able to:

K. Allow integration with citation services such as EndNote and Refworks.

L. Integrate with your existing and future eContent vendors.

M. Come with a mobile interface for use on iPhones and iPads but also smart phones and tablets.

It goes without saying that the ILMS should also have a fully functional:

N. Periodical module – and that the periodical module has the option of doing claims.

O. Cataloguing module – that properly handles bibliographic records as well as copy records.

P. Orders/Acquisitions module.

Q. Reservations module.

R. Reports module which ideally should allow you to quickly and easily slice and dice reports on circulation as well as collection development.

Efficient workflows

Library staff in Australia are expensive. Eighty precent of the real cost of keeping the library open and operational is going to be wages. Given the skills and training required to be a good teacher-librarian, librarian or library technician, this is to be expected, and is as it should be. So it is also important to choose an ILMS that will allow you to streamline your staff work practices and work more efficiently. This is not about getting rid of staff. We are all expected to do more with less, so choose an ILMS that will free up your staff from as much unnecessary low level back room processes as possible. Choose an ILMS that is powerful, flexible, yet easy to use. When choosing an ILMS it is also a very good time for you and the other library staff to take a really hard look at your workflows and see how they can be streamlined with the new system.

Resource sharing and integration

The next generation of school library ILMs also needs to support resource sharing beyond the confines of a single school as well as support new and acquisition models such as pay-per-view, patron demand driven acquisitions, non-linear lending, and online resource sharing. For example, In 2009 the Harvard University Libraries, one of the largest libraries in the world with over 16 million volumes, 1,200 library staff and USD $159 million annual operating expenditure, acknowledged that it can no longer singlehandedly support its user's needs with its own collections and resources. Rather it must rely more on collaboration and shared collections with other institutions and introduce an 'access to content' rather than an 'ownership of content' approach. To quote:

> *The Harvard libraries can no longer harbor delusions of being a completely comprehensive collection, but instead must develop their holdings more strategically. To do so, Harvard will need to embrace a model that ensures access to – not necessarily ownership of – scholarly materials* (Report of the Task Force on University Libraries, 2009, p. 4).

If a library like Harvard, with all its resources, no longer single handily support all its patron needs why should a school library be any different.

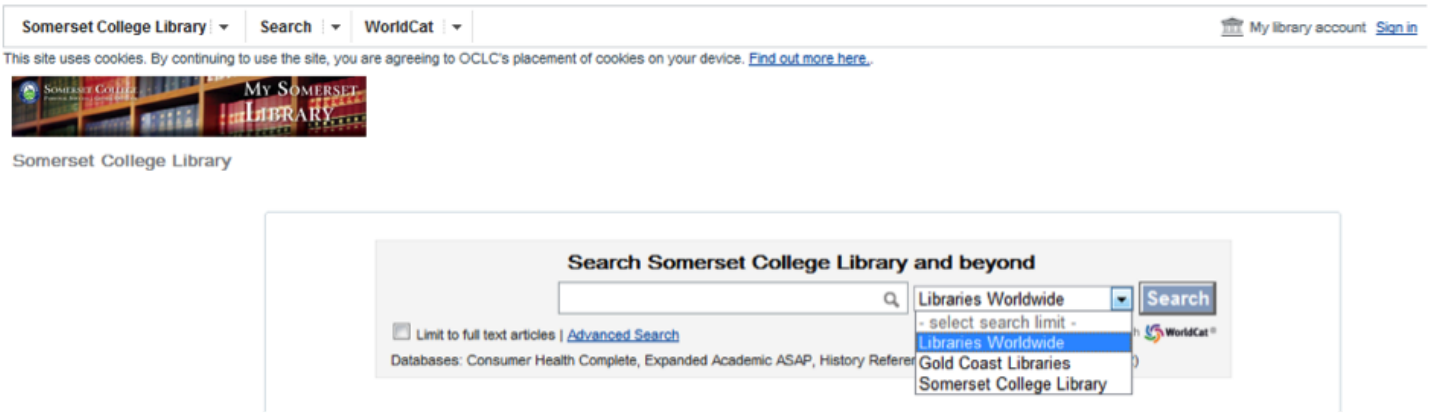
For a school library responding to this challenge it may mean adding and in and integrating the collections from other schools in the area, region, and dioceses. It could also mean a more strategic and nuanced approach to shared access to commercial eContent that goes beyond the price discounts that comes with consortia purchasing. As digital rights remains a critical issue for publishers and content providers, it will be interesting to see how they respond to libraries that cancel their own subscriptions to piggy back off another library service. For example, the 2013 UK government review into eBook lending in public library's found that:

1. 'Public libraries should be able to offer remote E-Lending service to their readers, free at point of use.
2. The interests of publishers and booksellers must be protected by building in frictions that set 21st-century versions of the limits to supply which are inherent in the physical loans market.' (Department for Culture, Media and Sport, p. 5)

What is particularly fascinating about this UK government report is that the needs for the publisher's to have viable business models is as important as the libraries role to provide eContent to patrons. It will be fascinating to see how this approach is implemented in the UK and if,

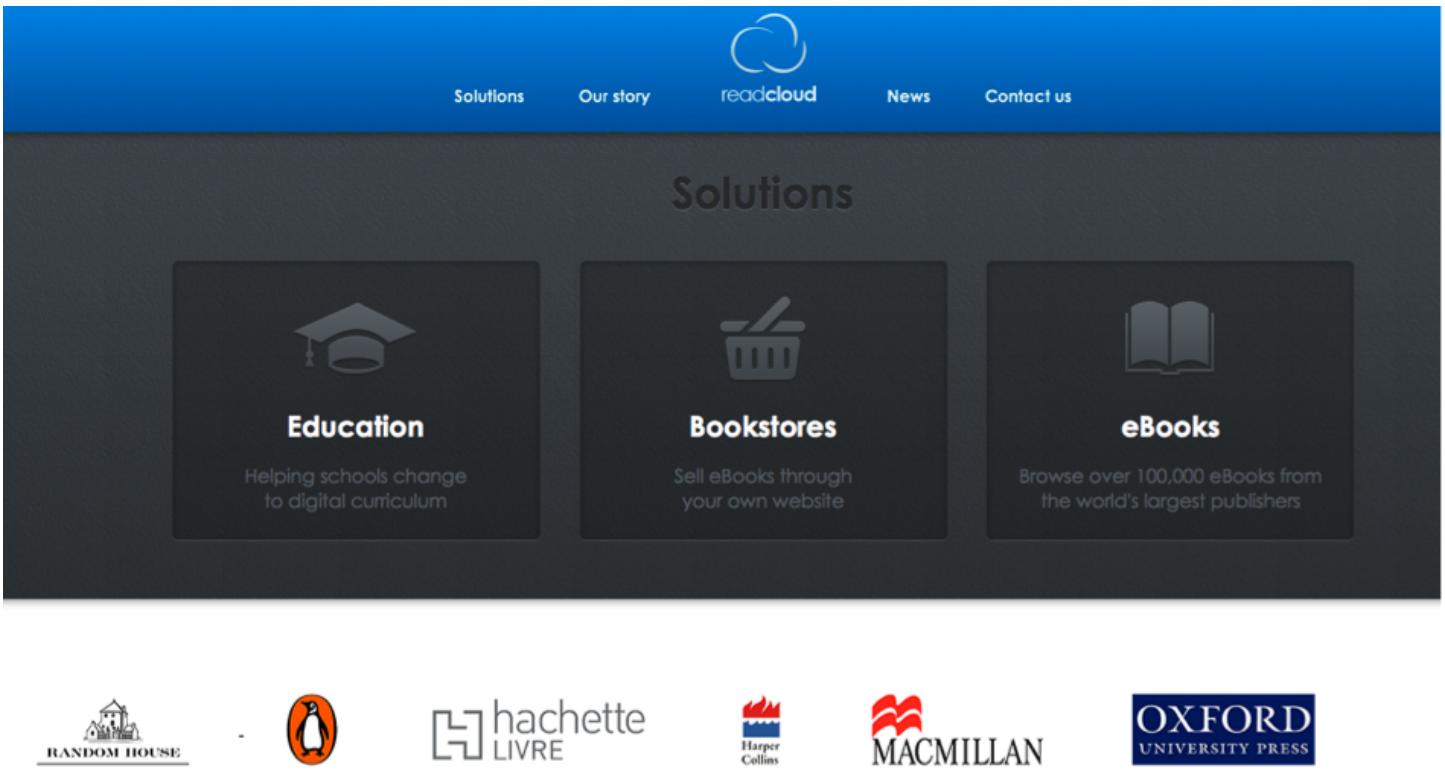
how, and when it is implemented in Australia.

In the meantime libraries are already starting to allow patrons to search across multiple library collections at the same time. For a school this can mean searching the school and the local public library collections from within the school library's discovery layer. A good example of this is the **Somerset College library in Queensland. See their site and the following image for details.**



Ideally this sort of integration of the school libraries collection with other resources should include free sources such as **Trove** from the National Library of Australia and the paid content from online publishers.

Strategically a school library should also start considering integrating its online and print collections along with a school's digital repository and the trusted free resources from platforms such as Trove so it can meet the challenges presented by new types of suppliers who may, deliberately or inadvertently, bypass the library altogether. A case in point is the services offered by **readcloud**. Here the vendor brings together online text books together with online fiction and non fiction in a single app based service. There is much to like about readcloud (see following image) but it does not seem to offer any sort of integration with a library's print collection or any other type of online content.



The concern is that it may be tempting for school principals to not understand, or care, that a good library collection is much more than what is offered by one single supplier. If a Principal is tempted to rely on one single supplier to offer a library service with no physical collections, what is the role of the library staff, the library as a space, and the overall library service? If your library has not started to integrate your online and print resources and make them readily available to students and staff this might be a wake up call to get started sooner rather than later.

Support, training and user groups

And finally, as the next generation ILMS will have to do more, and integrate with more online content, it will also be more complex. As a result good after sale support and training is critical. Access to online support documentation and webinars should be mandatory. An active and independent user group, and evidence that the ILMS vendor is engaged with and supportive of, the user group is also very important. When choosing an ILMs make sure you talk to some of the existing user group members.

Conclusion

Even if you don't need all of the functionality and services outlined in this paper, moving forward you are going to have to ensure you can work with the current and emerging library trends and expectations. If history repeats itself however, many of these existing and emerging services and trends from the high education sector are going to become more main-stream in school libraries. Sadly, this means some of the smaller ILMS venders are going to be left further and further behind. You need to make sure you choose a vendor who can demonstrate they have kept up with the rest of the library sectors and that they have an ongoing product development cycle and upgrade path. The growing need to integrate online content and offer a powerful yet easy to use interface is also going to be a challenge to many of the smaller and less well funded school libraries. I do not believe that the printed book is going to disappear any time soon, but I do fear that libraries that do not move with the times, and fall behind the integration of all of their online and print resources, will be marginalised and increasing seen as irrelevant or redundant. More than ever it is beholden on teacher-librarians, as well as the librarians and library technicians working in schools to be on top of their game and make sure their own skills and expertise does not fall behind. I do firmly believe that: a good focused collection that offers both physical and online resources, together with an easy to use yet powerful discovery platform, library spaces that directly support learning and literacy, and good qualified staff, remain an important and vital asset to any good school.

References

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Feighan, D. (2012) 'The Internet of everything - linking the print and online collections' in Proceedings of VALA2012 emPowering eFutures, the 16th Biennial Conference and Exhibition Melbourne, 6 - 9 February 2012. **http://www.vala.org.au/vala2012-proceedings/vala2012-session-8-feighan**

'Report of the Task Force on University Libraries' (2009) Accessed 18th August 2013 at: **http://www.provost.harvard.edu/reports/Library_Task_Force_Report.pdf**

David Feighan *has over 20 years' experience as a librarian in the school, government and private sectors. He has also set up and managed the Australian operations of a global online publisher. He is an active member of the library profession, and has spoken at numerous conferences in Australia and New Zealand. David participated in the Gillard Government's inquiry into the role of Teacher Librarians in Australian schools. He has also represented the Australian Library Information Association and their submission to the Australian Senate's subcommittee inquiry into broadband infrastructure. David is a past VALA President as well as VALA Biennial Conference Programme Chair. VALA is the largest library IT conference and trade exhibition in Australian. At Bialik College David was employed to set up the new Bialik library building, as well as update the library services to ensure they support the curriculum, literacy, and independent learning.*