Identity and access management for global pharmaceutical companies

An insight report

“We don’t like IP access but sometimes we can’t use single sign-on (SSO) and sometimes have to use IP to get access to publisher resources. The publisher sites don’t reliably work [with IP access]. We would like a world where SSO is working for all.”

(Librarian, global pharma company)
This report is the culmination of a four-month project exploring current challenges around authentication and access in global pharmaceutical companies.

Sponsored by not-for-profit authentication management experts OpenAthens and discovery experts TDNet, the report provides an insight into the state of the industry by garnering views from librarians, publishers, technology companies, industry bodies and membership organisations.

To gather information for this report we:

- Emailed nearly 100 library and information professionals in global pharmaceutical companies to encourage participation;
- Organised three micro surveys;
- Facilitated three online discussions;
- Arranged 13 one-to-one interviews;
- Collated insights from OpenAthens and TDNet customers, R&D and conference attendance.

We sought to ascertain views on challenges, barriers to change and the ‘ideal scenario’ that respondents would like to see in place.

If the vision is single sign-on that can work for all – what are the obstacles? And what can we do to overcome them?

Independent consultant Catherine Dhanjal of TheAnswer Ltd has worked with libraries and library vendors since the early 2000s and worked on this project in liaison with OpenAthens and TDNet.
OpenAthens and TDNet wanted to advance the conversation around authentication and access challenges and solutions for global pharmaceutical companies.

Between them, TDNet and OpenAthens have an established joint solution tailored specifically for the corporate market. It incorporates an established Federation of content providers and end-to-end integration with corporate local directories (OpenAthens) and implementation of seamless user authentication with linking and retrieval of content (TDNet).

Their goal with this paper was to gather information and invest resources to deliver an improved solution to global pharmaceutical companies, and to share the results of that research and those discussions with the community.

Other initiatives are already underway to help translate library and user needs into tangible and practical actions. Notable amongst these are an event sponsored by the Pharma Documentation Ring (P-D-R) on authentication in June 2015 and a subsequent event in Amsterdam in June 2016, sponsored by Copyright Clearance Center (CCC), which brought together technology vendors, publishers and pharmaceutical companies.

Roger Schonfeld’s 2016 research, “Barriers to Discovery of and Access to the Scientific Literature in the Corporate Sector”, sponsored by CCC, provides a good overview of issues faced by librarians and their users not only in the pharmaceutical sector but also food and chemical companies. He told us that he would like to see future research include direct input from end users, rather than rely mainly on the filter of librarians.

In 2016 the P-D-R took forward a taskforce of four publishers, plus Helen Malone of GSK representing P-D-R, to form the Universal Resource Access taskforce (URA), sponsored by CCC at that stage. This currently comprises five participants from P-D-R companies and four STM publishers.

This was subsequently combined with the International Association of STM Publishers (STM) RA21 (Resource Access for the 21st Century) project. The URA taskforce became the corporate workstream of RA21, and it also has academic workstreams.

The RA21 workstreams currently involve a small number of user companies, publishers and some technology organisations such as Atypon, Highwire, Eduserv (OpenAthens) and ORCID.
Executive summary

One of the major tasks of libraries and information centres in large global pharmaceutical companies is the provision of information and literature that supports research and business activities. This requires efficient and effective workflows for the deployment of these materials to their users.

They’re also grappling with a lack of appropriate discoverability, complex workflows to access and use these resources, and the consistency and availability of usage statistics. This means making the case for resources is difficult, especially in the face of shrinking content budgets and staffing. It also stifles effective identification of training needs and effective promotion of resources.

Authentication has been identified by most of the parties that took part in this study as a key agent in discoverability, in fostering simplicity of access to content, and engendering resource usage analysis for purchase and budget allocation.

This paper summarises these challenges and offers ideas to move the debate and solutions forward.
Respondents commented:

“The biggest on-site challenge is that there are massive monies being paid for resources and the resources are often obscured and researchers may not realise the cost or value of their library sources. It can even look like the resources are being provided by IT rather than the library service as the login looks like an IT login.” (Industry commentator)

“There’s a sense that the greatest challenge for librarians is communicating that the resources are available and that comes back to ensuring that the constituents of the library understand the value of the database, how and who uses them and how comprehensive they are.” (Publisher)

“The biggest challenge is that researchers don’t necessarily know they have access to the resources – we need to make them aware they’re available and what they are and what they do. A lot of people get used to using one database and one tool and don’t realise there’s a lot of other things out there. Training and knowledge needs to be brought to these users.” (Technology vendor)

And on why some might be reluctant to move away from IP:

“A site licence model works well for publishers and content providers and the authentication and access model gives you unlimited access to a bundle across a geographic site. This is a coherent way to sell something.” (Librarian)

The inference is that other models would give libraries more of a lever to put pressure on publishers.

However, there is an overwhelming sense from all stakeholders that a move away from IP, towards single sign-on is the preferred path:

“SSO is the fastest growing authentication method we have – we have calls every week with new customers to integrate – it’s growing exponentially. It allows for all sorts of data transmission, syncs with the customers’ Active Directory, so if a user is an employee or listed on there and gets access, when they are no longer in the database, the access ceases. It provides a security layer to organisations. Creates multiple solutions in one, which is a really good thing. Definitely the way of the future – it’s already there, every big corporation uses SSO for the most part and there’s a huge movement that way.” (Technology vendor)

There is a clear requirement for collaboration and open discussions between publishers, technology vendors and librarians. There is an appetite for change, although disagreement about how big that appetite is, can be demonstrated by this candid comment:

“Another obstacle is that publishers and librarians are a bit old fashioned in thinking. They don’t have a real culture of change like other industries. Many people in this area are holding onto the past. This is a very black and white thing to say but that’s my feeling.” (Librarian)
Challenges

The context

The library team will typically manage diverse resources from a large number of publishers and suppliers, and be involved in working with the IT department to specify and manage the technology required to administer access for increasingly online-only resources. These sample comments give additional insight:

“We have subscriptions for 13,000 journals from around 130 publishers, plus access to 50 databases.” (Librarian)

“We subscribe to all the main publishers in the world, plus 15 minor ones. Of the journals you need to pay for, we provide access to 10 to 15,000 journals.” (Librarian)

Geographically dispersed users with widely varying research skills add to the complexity:

“We have 5,500 staff overall in the organisation, with an active library user base of 500 people, spread across our 50 offices worldwide. We have a diverse user base: in some countries there are 2 people, in others 1,500 people. Our users’ knowledge base varies from a personal assistant requesting information on behalf of someone else to good quality researchers carrying out their own searches.” (Librarian)

“We have a team of 6 people potentially servicing 70,000 users although we only give access to those sharing in the cost of the library, which is around 25,000 users. Other staff can do a minimal search but they don’t get access to our services, or to full text articles and we can’t support them if they have a question.” (Librarian)

They also hint at the future:

“We have access to several search platforms where search is stronger – we go beyond Google Scholar and use paid-for specialist search platforms. There are more and more open access articles and journals available, so we may surface the preprint – more and more of our researchers find articles on the internet and there’s a decline in spend on full text. We will spend more on search and analytics in coming years.” (Librarian)
Current challenges around authentication and single sign-on can be grouped into six main areas:

1. Accessing resources off-site; access anytime anywhere
2. Administering access
3. IP addresses
4. Usage statistics
5. Working with the IT department and IT skills required in the library
6. Privacy, GDPR and security issues

We found no clear consensus of which is the biggest challenge although there was an overwhelming sense that moving away from IP towards single sign-on would help overcome many issues, such as:

“Institutions with proxy servers are the most painful. Need to hit the login barrier time and again and it is a source of incredible frustration.” (Industry commentator)

“There’s a different authentication method for pretty much each information resource – from IP authentication to individual user registration via individual user name and password, or SSO against our internal user directory. It’s time-consuming and complicated. We want SSO for all resources ideally. That won’t be the case but if we could tackle 80% that would be good.” (Librarian)

Accessing resources off-site; access anytime anywhere

It seems inevitable that demand for library resources whilst off-site is now essential:

“Users increasingly want to access content from any device/any place/anywhere.” (Publisher)

However, not all organisations are experiencing that upswell in demand:

“Not sure how sought after [off-site access is] from researchers – it’s not easy to read scientific papers on mobile devices. They mostly print and save to PC.” (Librarian)

And there are challenges:

“Historically access to databases has revolved around IP addresses and it’s an easy solution if you’re in the IP range. Nowadays people work all over the place, airplanes, hotels, cafés – and IP doesn’t work for that scenario and doesn’t work for security risks – you’ve exposed your IP address and people might want to take advantage of that. So, the organisations partner with third parties such as ZScaler to mask their IP addresses but that creates problems with access and authentication to other resources.” (Technology vendor)

Administering access

This can require significant amount of time from library staff and a level of technological ability or training from both them and their end users:

“Authentication systems (and providers that use them) need to be cognisant of the setting in which content is being delivered. A one-size-fits-all approach is not achievable given the varying levels of IT support and expertise.” (Membership body)

“We know that librarians spend time resolving access problems for users who are frustrated or confounded by the steps currently required for remote access to resources.” (Industry body)
IP addresses

There were many comments relating to the challenges and difficulties IP access presents librarians and end users, from the administrative side for librarians:

“Creating, and maintaining accurate IP address lists and sharing with (many) publishers is also a significant administrative responsibility.” (Industry body)

To the limitations of IP access:

“Since the introduction of online journals in 1990s, access has been managed through IP address. And while people were sitting on the campus served by the library network it was near-perfect and presented easy and quick access. Now expectations have changed. We are doing more remote working and have easy access as consumers - we don't get that experience in study or work at the moment. Expectations will increase and increase. For example, with online banking we used to have to go through more complex authentication than is apparent to us now. Security and integrity of publisher and library platforms is key but it must also be made as streamlined as possible for people.” (Industry body)

“If there isn't single sign-on for resources where the access is IP checked, it's a challenge to figure out who the users are at each site and to promote the right content to the right functions. We have one IP address for 6,000 of our users. We can't even tell which department they're from.” (Librarian)

And the necessity to make that solution available while there's demand for it:

“An example of a publisher not providing ideal customer service is if they're asking the customer to do things, which the customer doesn't know how to do. The objective behind any software programming is to make things easier. The primary purpose of authentication is to serve your client. We don't prefer IP access, it's rather insecure but if a client wants it we provide it. It comes down to customer service; a responsible publisher shouldn't ask their clients to bend to the rigid ways they may operate.” (Publisher)
Usage statistics

Usage statistics underpin the ability to cross-charge internal customers for library resources, demonstrate value for money, identify training needs and pinpoint active and non-active users for internal marketing purposes. However, getting them is not yet straightforward:

“It’s our most painful problem. For pretty much every information resource there’s a different authentication method – from IP authentication to individual user registration via individual user name and password, SSO against our internal user directory – getting user statistics is time-consuming and complicated. We get usage statistics in multiple templates, formats and layouts – some detailed by user, some just by IP address. More detail is best for us.” (Librarian)

“We use [usage statistics] heavily for negotiating with publishers. To justify [purchasing] a database we need to know the number of users. We primarily rely on Counter-compliant reports. With IP access, it’s hard to know who uses it etc. We hope OpenAthens can help overcome that.” (Librarian)

On the topic of reliability of usage statistics:

“[Usage statistics are] very important. We measure everything and use the statistics for cross-charging within our organisation. We only give access to people who share in the cost, so measuring usage is very important.

We often find variance in publisher statistics - if you download their usage statistics and then download again two months later for the same month they have changed. That gives us the impression that publishers are playing with the user statistics. We feel we can’t rely on those statistics. If there is something we can trust more that would be a step forward.” (Librarian)

Vendors and intermediaries are aware of the importance of usage statistics:

“Usage statistics in general are huge. When it comes to what people are using and doing in our system it’s critical. Customers want to know all this information. It all relates to spend. Helps them make informed decisions for the future. What did we do, what can we change, how can we expedite functionality? Usage is also important to the customer – who is accessing the system – how many users do you have now listed on our account? Get a feel for who’s using the services and use that data to promote the services. User statistics are critical.” (Librarian)

As are publishers:

“Publishers want to be able to offer personalised services which involves interaction with the users and knowing who they are – this of course depends on permissions being provided by the users.” (Industry body)
Working with the IT department and IT skills required in the library

The skills required of information professionals in global pharmaceutical companies now involves a much heavier level of technology expertise. These skills are required to provide library services to users and also to head-up projects where the IT department might otherwise impose a solution, such as IP access and authentication solutions.

“We have dynamic IP addresses for all our global offices, a change that the IT department made six months ago without forewarning us. They didn’t know what impact this would have on our services. We can’t work around the issue and can’t just link direct to the sites.” (Librarian)

“Libraries are part of much bigger organisations that use single sign-on across a range of services, and so changing the nature of content authentication and access is part of an enterprise level discussion and takes many years to effect.” (Membership body)

As is often the case, the relationship with the IT department is essential but not always harmonious:

“We’re in a network with three other companies plus universities. It’s not always easy for a library to have good collaboration with the IT department.” (Librarian)

Having good technology skills within the library team and doing the utmost to create a good relationship with IT is almost essential, but even that may not be enough to get their input when it’s needed:

“My background is IT, so that’s helpful for our library and I have good contact with our IT department but they are all now centralised and it’s hard to get priority on their list.” (Librarian)

“[The] reality is that a lot of the library staff aren’t technical in that nature so don’t have the skill set to understand what needs to happen for SSO and authentication, and bandwidth for IT department is an issue too.” (Technology vendor)

“[Barriers to change are] mainly organisational and on the client side - pharma companies have access to pretty sophisticated technology solutions but the information professionals who purchase don’t always know that and don’t always know who to talk to get it up and running. [Librarians’ biggest challenge] is understanding and coordinating with their technology folks over the access side – access management technology is fairly complex so need specialist skills to understand them.” (Publisher)

Privacy, GDPR and security issues

The EU GDPR regulations around data management and privacy will be mandatory from 25 May 2018 for all service providers that handle user data, formalising processes which libraries may already follow:

“We have to have approval from our users to send information such as email address, first name, last name, to OpenAthens and to the publishers.” (Librarian)

The RA21 corporate pilot includes looking at the impact of GDPR and privacy issues to see if this will impact sending first name, last name, email and user ID to publishers, in return for granular results and personalised alerts. As one publisher comments:

“It’s really a balance of security and convenience. The client wants to provide the greatest convenience but in such a way that they’re secure, and data is only going to people who are active subscribers.” (Publisher)
Moving away from IP access -
towards ideal authentication
and single sign-on solution

SAML single sign-on seems to be the way to
go – all the pharma companies I’ve talked
to have set up access through user ID and
password and publishers have that but
it’s admin heavy to set up.” (Librarian)

“I hate having hundreds of passwords,
so a way to log in using SSO to multiple
different publishers/sites securely would
be marvellous.” (Membership body)

Moving towards single sign-on is being
driven in part by a desire to make the user
experience easier:

“Researchers just want the content.
They want an easy way to access multiple
publisher content from an SSO route
– this would solve problems in terms
of them wanting to look elsewhere
for access.” (Membership body)

“The user experience is a key issue as
people are so used to clicking on an article
link and getting straight in.” (Librarian)

As well as to bring new services to users:

“IP access is a problem – for off-campus
access for example. And there is a trend
towards personalised services so that
users have reading lists, recommendations,
bookmarking and preferences, which you
can’t get through IP.” (Technology vendor)

And to encourage legitimate access and
compliance with content providers:

“A more broad authentication system to
allow easier legitimate access will hopefully
prevent people going to pirate sites they
currently visit, because it’s easy to get hold
of the content there.” (Membership body)

And provide usage analysis:

“Not only how much is being used
but also who is using – this is a key
piece of information for a library
to deliver training.” (Librarian)
Collaboration opportunities

It’s clear that there are formal and informal opportunities for collaboration at a very local (organisation) level, country level and international level, with some organisations being more outward looking than others. For technology vendors, customers are important stakeholders:

“We definitely get a lot of info from peers and colleagues. Customers help move the needle – many of these organisations are very big and forward-thinking, we take their feedback and develop based on that. From my team’s perspective, we look for new and upcoming technologies so attend seminars and webinars to keep on top of developments. We are deploying the developed products so we stay aware of customers, other vendors like OpenAthens, Okta etc. and keep in tune with the market – customers give us the best feedback as they’re the ones with the need.” (Technology vendor)

There is also a sense that those deeply involved in initiatives such as the RA21 projects feel that they are communicating clearly with those on the outside and that there are clear possibilities to get involved.

“RA21 is not supposed to be seen as a limitation -- this project is open beyond RA21 stakeholders.” (Technology vendor)

“In RA21 we try and get cross stakeholder collaboration, it’s important to get collaboration across different stakeholder groups.” (Publisher)

However, individuals outside those projects aren’t necessarily aware of developments and discussions with stakeholders for this four-month project. Plans to disseminate information and open up participation to smaller libraries and more publishers will be welcomed and it is hoped this will come to fruition.

As one of the organisers of RA21 comments:

“RA21 came primarily out of the publishing community but now has multi-stakeholder representation both across the project committees, and within the practical pilot projects that are currently underway. Any
solution needs the participation of everybody that will be affected, to take it forward and to clearly identify the benefits to people from the different stakeholder groups. Within RA21, we are building on the substantial collective experience of participants including publishers, libraries and those involved with identity and access management, to build and test potential alternatives to IP authentication.”

There are specialist initiatives, for example, for academic libraries:

“I’m sure there are views from SCONUL and RLUK members that could contribute to this as well as Jisc and Eduserv, but it depends on whether you are more focussed on healthcare / SME feedback than an academic library.” (Membership body)

But it seems clear that cross-sector and cross-country participation will help drive developments and change more quickly:

“[Collaboration] is a very important question. We need to do better. We should look more into the outside world. We read our own journals about information. We have our network in our country with big companies and universities but that’s only two meetings a year and we don’t really talk about authentication. We talk more about issues that are further away, like what will happen in five years.” (Librarian)

There are two main blocks to change: “Finding a system that everyone will sign up to and use and works with all the systems. And for smaller independent publishers it’s the affordability of the systems that’s a challenge.” (Membership body)

Whilst others have a more outward-facing focus on information gathering and involvement:

“We keep an eye on RA21, also Twitter – things like Force11 (came out of the Future PDF/Beyond PDF conference) – and other groups which are very forward thinking in terms of where we take scholarly comms.” (Membership body)

Perhaps there’s an opportunity to develop more conferences and seminars for information professionals, publishers and related stakeholders in the pharmaceutical and biomed sector:

“There aren’t many conferences relevant to pharmabiomed.” (Librarian)

Collaboration opportunities cited are:

- ALPSP run courses
- Discussions with OpenAthens
- Discussions with RightsDirect
- Discussions with TDNet
- Electronic and Resource Libraries Conference
- Force11
- International Association of STM Publishers (STM)
- Jisc
- Journals
- Librarians
- NISO
- OpenAthens Federation
- P-D-R
- Peers and colleagues
- RLUK
- RA21
- SCONUL
- SLA DPHT Pharma and Pub Tech Division
- Society for Scholarly Publishing (SSP) conference
- Technology vendors
- Twitter
- Universal Resource Access taskforce (URA)
- We run our own events (technology vendor)
- We work closely with publishers (technology vendor)
- Yearly pharmaceutical library meeting for our country
Conclusion

There are five key insights from the research:

1. Single sign-on cannot work in isolation, for real success the process must work for everybody involved. It must be part of a strategy, not a tactical response.

2. In the ‘triumvirate of trust’: publishers, librarians and end users, all have roles and responsibilities in making access work. Collaboration is key, with a shared vision about the benefits and the realisation that all need to invest in achieving the goal of a better end to end user experience.

3. The ultimate success of any access method is the end user experience. Data shows that if the end user experience is poor, users will turn to sites which bypass publisher paywalls and copyrights. An easy, quick and intuitive end user experience is vital to adoption or failure of access methods.

4. Publishers and librarians need to understand that building and maintaining a workable federation requires a considerable investment of time and resources – using an existing model, such as the OpenAthens Federation, presents the most robust and comprehensive solution.

5. A critical element is to spend time training and educating all parties about the benefits and processes involved: about the value of the library resources, about the importance of copyright, the consistency of implementation and how to use your access management method.

All these points will work together to drive continuous improvement towards fantastic federated access management.
Thoughts from OpenAthens and TDNet

“This insight report is an important reflection on the key issues affecting librarians, publishers and end users, and demonstrates how those issues have developed in the 2.5 years since P-D-R ran its event on authentication and access solutions.

We believe that federated access management is the key. But federations only realise their full potential when all members and all actors within the federation are aware of the importance of the part they play.

For us it raises the question of how we raise standards at every point in a federation and how we could build and maintain sector specific federations alongside or within the OpenAthens Federation – such as a Pharma Federation. We welcome thoughts on this from publishers and librarians.

We’ve been working behind the scenes for many months on developing our service to make it easier for smaller publishers to join, thereby reducing the technical expertise required at their end. We believe that the new OpenAthens Cloud solution we launched at Frankfurt Book Fair this year will help those smaller publishers join the OpenAthens Federation.

OpenAthens Cloud doesn’t require SAML expertise at the publisher end and is a managed service, ideal for publishers who are keen to benefit from the value of federated access management but without the cost of specialist technical requirements and skills.”

Next steps

If you’d like to be kept updated on future research and opportunities to discuss these topics with peers, please email openathens@eduserv.org.uk.

We’ll be discussing issues and themes from this report at:

- **UKSG 41st Annual Conference and Exhibition:**
  Glasgow – April 2018

- **OpenAthens Conference:**
  London – March 2018
About the sponsors

**TDNet**

TDNet specialises in developing and providing robust Technology-Content-Services combined solutions supporting research workflows in special libraries and information centres.

TDNet improves content discovery to advance research and practice by providing services for:

- **Discovery to delivery**: discovery web-scale search, link resolver, holdings management and knowledgebase services
- **Portals**: modular library and information centres managed portals based on a content management system
- **Authentication and access management**: single sign-on, authentication, access management and usage analysis

TDNet solutions uniquely combine technology and content together with extensive integration, customisation and professional services.

For more information about TDNet visit [www.tdnet.com](http://www.tdnet.com)

---

**OpenAthens**

OpenAthens is part of Eduserv, a not-for-profit IT services company based in Bath, UK.

OpenAthens offers identity and access management solutions and supports membership of the OpenAthens Federation. Our mission is to remove barriers to knowledge and connect people to information. More than 4 million users worldwide in 2,200 organisations, in nearly 50 countries benefit from OpenAthens.

Our international customer base ranges from education and research organisations, to government, charities, corporates, publishers and other service providers.

For more information about OpenAthens visit [www.openathens.org](http://www.openathens.org)

---

**Get in touch**

International: +1 6178 4989 449
UK: +44 1225 437 514
openathens@eduserv.org.uk