

## Chapter 33

# Access to Research Online: Technology, Trends, and the Future

**Kristina Symes**

*OpenAthens, UK*

### ABSTRACT

*The world is hungry for knowledge and quickly-producing researchers of varying caliber who are less dependent on the physical space than ever before. This presents a number of challenges to librarians, out of which issues related to technology stand out prominently. How can the library pave roads to curated digital content and make it easily accessible from any location? How does it remain relevant in the age of Google, sophisticated piracy and the open access movement? The chapter begins with an overview of IP-based and federated access technologies, touching on less-used methods as well. Personally-conducted interviews with library industry experts aim to determine current trends in order to provide a collective insight into future developments. These include the widespread migration towards cloud-based services, the global RA21 initiative, the open access movement, the need for better statistics, and new ways of content delivery, all of which affect libraries' demands for remote access in different ways.*

### INTRODUCTION

Society's need to access information has increased massively in the last decade. Why? Many reasons. For one, the technology is there. Google has made it easy to get excited about learning. On the other hand, due to technological advances, nobody can predict what the future will look like. The ability to adapt has long been considered one of the top survival skills and it is now taking a digital form. Universities now offer more student exchange, work experience and distance learning programmes than ever before, remote working is becoming more popular and field research is no longer a privilege reserved for post-graduate academics but a requirement for most professionals regardless of their qualification level. Library director Dr. Katherine O. Quinnell illustrated this trend by telling the author that 60% of Athens State University students are accessing resources online and the distance learning programme is expected to grow to 75% remote student population within the next 2 years (personal interview, June 24,

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2018). Remote access is now an inseparable part of any library's offering, however, despite technological advances that gave the world Artificial Intelligence, biometric authentication, the Internet of Things and Blockchain, librarians still have a limited choice of products when looking to enable remote access to online resources for their patrons.

At the same time, the internet users are starting to realise their data has value (Fontana, 2018). Long-established access methods, such as username and password authentication, are no longer good enough. Sharing credentials, in particular, is receiving a lot of criticism and is now considered a big no-no. IP-based access, although still widely prevalent, is also considered unsafe. While security is a very important aspect of users' daily interactions with the World Wide Web, the user experience is often the deciding factor, determining what services are going to be used more. Personalisation – the ability to tailor each website to one's needs – is a significant part of that while Single Sign-On is another highly desirable feature. Initiatives like RA21 (Resource Access for the Twenty-First Century) are striving to eradicate both user experience and security compromises each researcher has to deal with when older access methods are at play, also marking a step towards the end of the IP-based access to content.

The chapter begins with a brief but comprehensive overview of IP-based and federated access technologies, touching on less used (and occasionally misused) SIP/NCIP, OpenID Connect, and OAuth. Drawing on daily interactions with information professionals from all over the world and personally conducted interviews with other library industry experts, including software vendors and publishers, the author aims to identify and discuss current trends in order to provide a collective insight of what may be around the corner. Some of the trends discussed in this chapter include the widespread migration towards cloud-based services and infrastructures, the global RA21 initiative, the open access movement, the need for better statistics and new ways of content delivery, all of which affect libraries' demands for remote access products in different ways. Participants in the conversation demonstrate progressive thinking without resistance to new technology. On the contrary, they embrace the multitude of possibilities these advancements will bring. The library is ready to transform.

## **BACKGROUND**

The days when research was conducted exclusively in the library with a select few academics sitting amongst admirable piles of books, are gone. The world is hungry for knowledge and quickly producing researchers of varying calibre who are less dependent on the physical space than ever before. This presents a number of challenges to librarians, out of which issues related to technology stand out prominently. How can the library pave roads to curated digital content and make it easily accessible from any location? How does it remain relevant in the age of Google, Wikipedia, and sophisticated piracy as well as the open access movement? To find answers to these questions, one must courageously indulge in the understanding of existing and upcoming technologies. Why so? A wide sample of librarians the author had the privilege to speak to believe that in the world of technological revolution and the generation of the digital native users, this is what the future of the library will depend on, its ability to continuously innovate itself in ways of knowledge delivery to those who seek it.

As written in 'Access to Online Resources: A Guide for the Modern Librarian', the sheer number of technologies librarians deal with on a daily basis is astonishing (Botyriute, 2018). What is even more surprising is that helpful literature is scarce and often limited to an article or an overview of the implementation of a certain product. Only a limited amount of material exists to help library professionals

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