

Creative Management in Challenging Times: The Development of Lenus, an Open Access Health Repository.

A Case Study of HSE Library Services

The screenshot displays the Lenus website interface. At the top left is a search bar with a 'Go' button. The Lenus logo, 'The Irish Health Repository', is in the top center. The HSE logo and 'Feilthreannach na Seirbhíse Sláite Health Service Executive' are in the top right. A navigation bar below the logo contains links: Home :: My LENUS :: Submit :: Help :: Feedback :: Compliance :: Register/Login. A language dropdown is set to 'English'. The main content area is titled 'Irish Health Repository > Home' and includes instructions on how to contribute to Lenus, a list of key reports, and a Twitter follow link for @Lenus-HSE. A search bar is also present in the main content area. On the left, there are two sidebar menus: 'Browse' with categories like Communities & Collections, Title, Author, Date published, Submit Date, Subject, and Researchers; and 'Listed communities' with categories like HSCP (IS), HPE, Hospital Research, LIS, Other Irish Health Organisations, Research Articles, and Special Collections. On the right, there is a 'Hospital Research By Province' map of Ireland and a 'Local links' section with links to HSE Home, Search for books, hselibrary.ie, free posters biology & medicine, Pubs@RCSI, Directory of Open Access Journals, and Check publisher policy on deposit. The bottom section is titled 'Most Viewed Publications in November 2012' and lists five items, including 'Mental Health Assessment Tools: second edition 2012' and 'Kilkenny incest investigation / [Investigation team headed by Catherine McGuinness] ; report presented to Mr. Brendan Howlin T.D. Minister for Health by South Eastern Health Board: May 1993'.

12/5/2012

Compiled by Sophie Crowther, Taylor Jensen, Sarah Kennedy and Kate McCarthy IS40370 – Management for Information Professionals

Executive Summary

The focus of this report is the current management issues for the HSE Libraries' online Open Access (OA) repository, Lenus. The report provides information on the background and history of the Lenus project, including a discussion of the rise of OA repositories. A contextual analysis follows, outlining a number of internal and external influences that have shaped the management practices. Finally there is a discussion of the key challenges and opportunities involved in providing such a service for healthcare practitioners and researchers.

Open Access is still a relatively new concept, and Lenus is particularly innovative in that it is essentially a multi-institutional OA repository. This distinguishes it from the single institutional repositories of many universities, and highlights Lenus' emphasis on providing a nationwide service that is accessible to all, thereby supporting evidence-based practice in Irish healthcare. The timeliness and importance of operating such a service is highlighted by the fact that a recent Open Access Mandate was launched in Ireland, stating that all publicly or partially-publicly funded research must be made accessible through an OA source.

Because the case study examines an ongoing process, qualitative research methods were employed in order to provide for the most detailed analysis possible. In addition to conducting a literature review, a lengthy interview was carried out with the Lenus manager, Aoife Lawton, before surveys were emailed to all six members of the Lenus team to gauge their level of involvement and their own views of the current and future challenges for the repository. A number of issues became clear, in particular the challenges involved for time management.

Based on the findings, a number of recommendations can be made:

- The working group should be expanded so that more researchers can be made aware of and encouraged to upload their publications and articles directly to the repository. This will ensure that the Lenus team can spend less time harvesting content and more time cataloguing and editing.
- A more aggressive marketing strategy should be developed to promote research contributions to this repository in the future. This might involve dissemination of leaflets and brochures to hospitals and community-based healthcare organisations and more presentations by LIS staff at relevant conferences. The move by Dr. Barry White, National Director, Clinical Strategy and Programmes, to send a letter to hospitals to raise awareness of Lenus was a strategic success and should be expanded.
- The challenge of partnering with other Irish health-related repositories and university research repositories must also be addressed to expand the scope and availability of material.
- A strategic steering committee or advisory group should be established within the HSE to ensure that the future of Lenus is developed along the lines of best practice with regard to both OA and evidence-based healthcare.

Introduction

These are challenging times for information organisations. Economic recession, slashed budgets, staff cuts and hiring freezes mean that libraries are struggling more than ever to maintain the best quality of services. Ever-shifting developments in technology have had a particularly powerful influence on how information services are both provided and consumed. A vast number of professional and scholarly publications are now potentially accessible by anyone with access to a computer, and this has major implications both for research and for evidence-based work practices.

One innovative response to the rise of this new information technology environment has been to build online Open Access (OA) repositories. The Health Service Executive (HSE) of Ireland realised the timeliness and relevance of providing such a digital service for Irish healthcare practitioners and researchers and, following an initial attempt to build a repository in the mid 2000's, launched Lenus in 2009.

According to literature produced by Aoife Lawton (2009, p.26), the manager of this project, "Lenus is a national initiative designed to provide access to both current and archived Irish health research. Launched in February 2009, it is a repository in its infancy but showing significant potential to become a key resource for Irish health researchers."

This case study identifies and analyses current operational issues involving Lenus. The final report contains

- A description of the history, mission and values of the project
- An outline of the structural organisation and workflows
- A breakdown of the internal and external influences from which key management issues have arisen
- A discussion of findings from the research undertaken and a list of recommendations for future management practices.

Methods

The project team decided to take a qualitative research method approach to the case study, as this was deemed to provide for a more in-depth analysis of the management issues at stake.

The initial step taken by the team was to make email contact with Aoife Lawton at the HSE Eastern Regional Library in order to establish a focus for the case study. Ms Lawton outlined two significant new initiatives taken by the HSE library service in recent times, these being a clinical library service and Lenus, an online Open Access (OA) health repository. It was decided to focus on Lenus, as this was viewed to be an innovative project, providing many management challenges for the staff involved.

A literature review was carried out to learn more about OA repositories and their growth in popularity in recent years. A meeting was then organised with Aoife Lawton, the manager of Lenus, and two members of the research team travelled to the Regional Library at Dr. Steeven's Hospital to conduct an interview. An initial set of questions were written up by all team members before this meeting, but they were, for the most part, left open-ended in order

to facilitate a more casual interview at which Ms Lawton was able to impart as much information as possible.

The interview itself took about an hour and a half, in which it was identified that there were six people involved in the project. It was determined by the case study team that it would be beneficial to obtain more input from each of these team members. Due to time constraints, it was felt that interviewing all members would not be a realistic option so a simple survey was drawn up and emailed to each project member in order to establish their level of involvement and their feelings on the management challenges of running Lenus.

A second literature review was made to further the case study team's understanding of the management issues involved in maintaining OA repositories, as well as strategic implications for such an undertaking. This information was then combined with the results of the interview and surveys to complete the final case study report.

Contextual Analysis

Background and History

The Health Service Executive (HSE) is the governmental body responsible for public healthcare in Ireland. It was established in 2005 when 11 regional health boards were amalgamated, and its headquarters are at Dr. Steeven's Hospital in Dublin 8. It is the largest employer in the Irish State, with approximately 100,000 staff working either directly for the Executive or in HSE-funded agencies. The regional HSE Libraries remained relatively untouched throughout the restructuring process and retain a small staff of librarians but no archivists.

Throughout the 2000's much of the information collated by the regional Health Boards' websites and publications was at a risk of being lost. This was due to the abolishment of each Health Board's secretariats, which were responsible for the maintenance of all board minutes and publications. It was partly as a response to this that the Irish Health Publications Archive Project, entitled Hyperion, was developed to rescue and preserve information for the future. Although this project was very well-received there were issues surrounding the advent of Web 2.0 and the technology behind the repository. However, the experience of creating this repository, combined with an awareness of the growth of OA and evidence-based healthcare around the world, led the Regional Library and Information Service (RLIS) to decide that building a central online OA health repository would be extremely beneficial.

After a substantial amount of research was undertaken to gauge user requirements and suitable digital tools, BioMed Central was chosen as the best software to use. The new OA repository was called Lenus after the Celtic god of healing. The HSE name was deliberately excluded as the RLIS wanted Lenus to be more than an institutional repository: it was designed to include Irish health research publications from across Ireland and from both HSE and non-HSE sources.

Organisational Service / Resource Structures

Lenus is run by a team of six people, none of whom operate the service on a full-time basis. It was emphasised in the interview and surveys that much of the staff's time is devoted to harvesting information from various sources and through different means, including setting up alerts to inform when new material is available, as well as manual searches of relevant websites.

Information is gathered and organised into 6 communities on the Lenus database:

- HSCP (IS) – This is made up of research by HSCP Health and Social Care Professionals.
- HSE – Includes all publications by the HSE
- Hospitals – Research by all hospitals, HSE and Non-HSE
- Other Irish Health Publications
- Research articles – Journal articles and theses (peer reviewed and published or published by a statutory organisation, theses or dissertations passed by an accredited institution)
- Special collections – Digitised content and archival content.

The following diagrams outline the three most likely workflows for finding and/or uploading content:

Diagram 1. Workflow for Lenus Working Group and Individual Authors

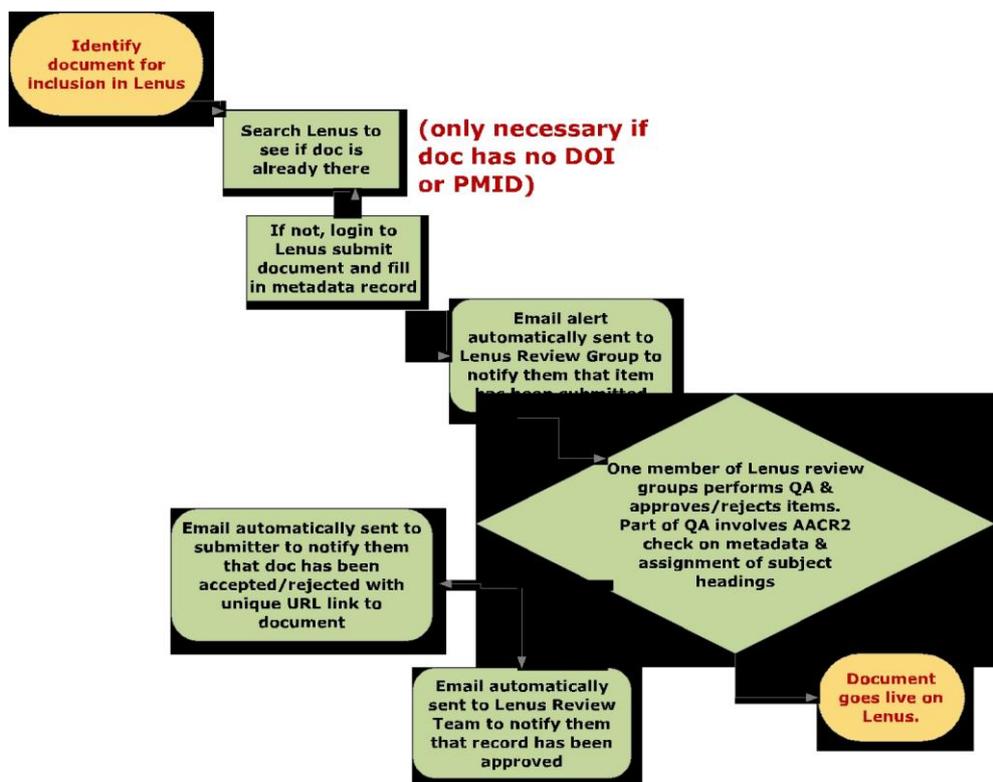


Diagram 2. Workflow for Lenus Project Team

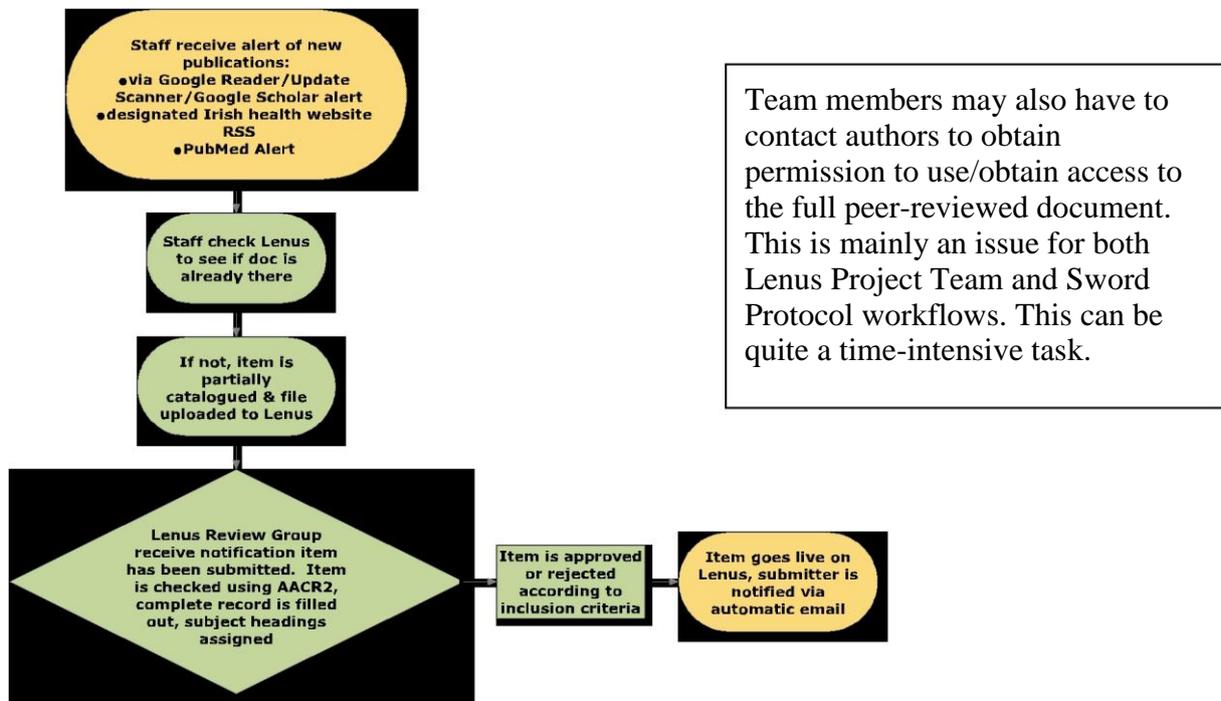
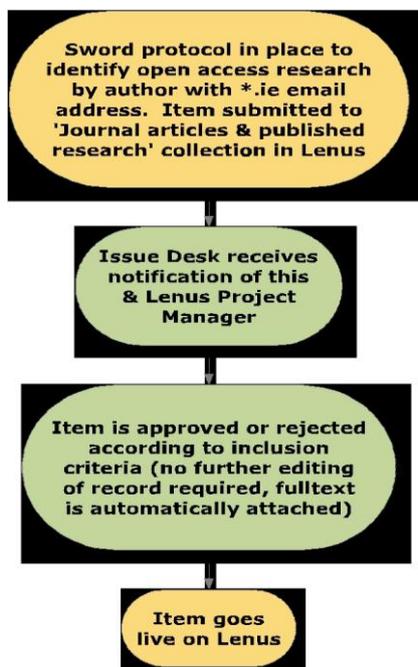


Diagram 3. Workflow for Sword Protocol.



Stakeholders

- 1. Lenus team and HSE**
- 2. Working Group**
- 3. Healthcare Researchers**
- 4. Healthcare Practitioners**
- 5. Irish Citizens**

1. Lenus team and HSE

The RLIS staff members involved in the operation of Lenus are naturally amongst the most important stakeholders. As is the HSE itself: the provision of a digital service such an OA repository is not only considered best practice in terms of information services and knowledge management but is also something of a return on investment for HSE-funded research, which can be collected and stored for future generations.

2. Working Group

There is a working group which meets twice a year with governmental and non-HSE professionals involved in all aspects of healthcare. The working group consists of members of the following organisations: Economic and Social Research Institute, Department of Health and Children, Food Safety Authority of Ireland, An Bord Altranis, Health Protection Surveillance Centre, Health Research Board, Health Service Executive Library Services Management Group, Rotunda Hospital, St. John of God Hospital, Rape Crisis Network Ireland, Irish Hospice Foundation, and Irish College of General Practitioners.

According to Lenus documents, the purpose of this working group is to:

- Provide feedback on Lenus repository
- Make suggestions for enhancements
- Encourage active participation in the development of Lenus.
- Foster collaboration between health care providers in Ireland.

3. Healthcare Researchers

Health research has always been a weakly-funded area in Ireland. It is vital to those researchers who are active to have a suitable, centralised resource where they can not only view other relevant research publications but can upload their own work. This provides an opportunity for shared and group research projects but may also enhance the reputation of individual authors and increase the chances of further funding.

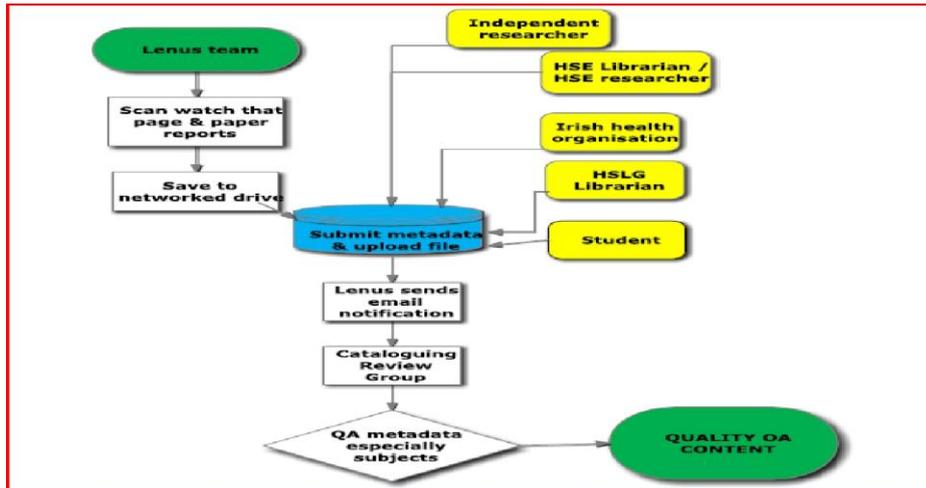
4. Healthcare Practitioners

The rise of OA health science repositories in the United States and Europe has coincided with an increased focus on evidence-based clinical care. Access to timely and relevant research output is of great benefit to those who are caring directly for patients. It was stressed by several members of the Lenus team in the interview and surveys that evidence-based practice plays an important factor in the goals of the OA repository.

5. Irish Citizens

OA repositories like Lenus are accessible to all Irish citizens and tax-payers, allowing them to be suitably informed about the kind of output that results from publicly and partially-publicly funded research.

The following diagram outlines the proposed future workflow which includes the Healthcare Researchers and students etc.:



Mission, Values, Vision

In 2011, a meeting was held to establish a strategic plan and specific internal goals for Lenus. These were, “to define the content and coverage of material in Lenus, to establish a structure for the development and growth of Lenus, to outline the market positioning of Lenus,” and “to map out critical factors to make Lenus self-sustaining.” The aim is for Lenus to become an efficient tool for health professionals to utilise, contribute to, and consult when seeking health-related research.

Lenus’ stated vision is “to become the primary online resource for information relating to the Irish health services”. By maintaining a content-rich OA database of Irish-related health research publications and documents from both HSE and non-HSE sources, Lenus aims to benefit researchers and practitioners on a global scale.

Lenus is also committed to supporting evidence-based clinical care in Ireland. This is very much connected to the values of OA health sciences publication. In November 2012, Lenus, as a member of the National Steering Committee on Open Access Policy, took part in the launch of a national Open Access mandate, which stated that “peer reviewed journal articles and other research outputs resulting in whole or in part from publicly-funded research should be deposited in an Open Access repository and made publicly discoverable, accessible and re-usable as soon as possible and on an on-going basis” (2012, p. 2).

Key internal influences

Resources: Lenus is managed by a six-person team who are also responsible for other projects. Human resources therefore are limited. Despite wanting to improve and increase the service, the team worries that more contributions will make it impossible to manage the project efficiently, given that there are already bottlenecks when it comes to processing material (e.g. HIQA). The lack of travel expenses also affects the potential for the Lenus library team to fulfil their roles as educators, promoting the service around the country.

Competences: There has been a ban on education and continuing professional development funding in the HSE since 2009, which makes continuous learning difficult. It is particularly frustrating in relation to technical skills for the Lenus team. Though skilled information professionals, they are aware of deficits in technological skills that could be improved with further training, which would allow for greater efficiency of data collection. This would increase the amount of time allotted for cataloguing content rather than collecting.

Organisational alignment: The HSE Libraries are still regionally-based and library staff members are somewhat isolated from each other. This makes it difficult to maintain a coherent alignment of objectives and to possibly delegate the enormous amount of work involved in the Lenus project.

Environmental Scan

Literature Review

Due to a variety of economic and technological factors the publishing world is currently in a transitional period, and this is very much reflected in the area of scholarly and peer-reviewed journals. As a result of increasing journal prices and reduced library budgets, Open Access now plays an influential role for those conducting and consuming research publications. Gavin Jamieson (2004, p.472) states that the “underlying principle” of OA is “to remove the access barriers to the results of scholarly research, in order to maximise the benefits of this research.” One response that information organisations in academic and governmental institutions have taken is to build online repositories, many of them OA, to preserve and make available their own research material. In 2009, Kevin Lalor, the Head of School of Social Sciences and Law in DIT, praised both OA and repositories, bringing issues related to Lenus into a uniquely Irish context.

The advent of the Internet has entirely changed the way in which information is produced and shared. This clearly has a knock-on effect for any research being conducted and raises a number of questions about whether research should be published for profit or should be made accessible to all. The publishing world has had to readjust somewhat in the past number of years and has tried to find a new economic model. Jamieson (2004) and Chan et al (2009) have discussed the impact that this has had on the health sciences in particular. Chan et al (2009) speak from a specific perspective on health information in developing countries, and the importance of availability of information in this context. Notably, however, they also point out that it may no longer be appropriate for publishers to make a profit from certain types of research, namely health information which may need to be utilised by professionals in the industry.

Barbour et al (2006, p.339) discuss the need to change copyright around these types of publications, giving some context to the current academic publishing model: “Authors of scientific articles handed over their copyright to the publishers to prevent unauthorized print copying; thus, the prevention of unauthorized copying helped to disseminate information, by proving a valid business model for publishers.” This suggests that the previous business model is now no longer valid, a theory which is certainly backed up by a number of other authors (e.g. Willinsky et al, 2007) who have criticised academic publishers.

Clearly there is conflict brewing amongst those who wish to uphold the basic ethos of academic publishing versus those who need to make a profit from this information. Willinsky et al (2007) discuss a particular incident occurring between the publishers of a health journal, the Canadian Medical Association Journal, and its editors, who made an executive decision to publish research on a topic which came into direct conflict with the publishers. This ultimately led to the sacking of two top editors, and the resignation of many in protest, which in turn led to the establishment of the OA repository Open Medicine. Willinsky et al (2007, p.595) argue very much in favour of OA, stating that “this method of publishing provides a venue for the emergence of new approaches, ideas and independence from sources of competing interests in scholarly publishing.”

This is in line with Chan et al (2009), who also cite the rising costs related to academic publishing as damaging in relation to the sharing of important information. Conversely, Vlachaki and Urquhart (2010), in providing balance around their discussion of OA health journals and their utilisation by Greek researchers, point out that one of the most commonly applied economic models for OA journals, whereby the author pays to be published, may be unattractive and deter authors from publishing. This is something that must be kept in mind by the managers of repositories who are seeking to encourage authors’ participation.

The importance of sharing health information and ensuring that it is available for those who urgently need it is discussed in depth by Chan et al. (2009), as they cite the example of the doctor in a southern African country who made a critical decision about a HIV-positive patient’s antiretroviral drug prescription based on the abstract of a journal article: his organisation could not afford to pay subscription fees. Whilst obviously an extreme example which also highlights the difference in the information available to health workers in the developing world compared with those in the developed world, it is quite relevant to Lenus in light of funding cuts and the Croke Park Agreement which has left Irish health institutions understaffed and underfunded.

Indeed, as the intention is for Lenus to be used as a ‘one-stop-shop’ for all Irish health-related research (Lawton, 2010); it is interesting to see how these types of repositories are used by the potential target demographics. Whilst Lawton (2010) states that the intention is for Lenus to be used as a collaborative tool for researchers as well as being a repository for related information, O’Keeffe et al (2011) suggest that a repository such as this may be utilised in a way even beyond this in their discussion around the information-seeking habits of health personnel. The authors state that physicians, for example, “raise a total of 269 questions about patient management” on a daily basis, which suggests that there is a place for a health repository like Lenus to be used in a very practical way by health professionals.

Zhang et al (2004, p.670) also conducted similar research, which concluded that “physicians

tend to use the Internet as an information resource to enhance patient care... and they usually demand that access to online information resources be instantaneous, relevant, credible and easy to use.” This strongly suggests that there is a need for a central resource that health workers can consult for queries they have on a daily basis. Similarly, in their studies of the research habits of Taiwanese nurses, Lu et al (2008) found that most health professionals did utilise online sources for quick questions, but that there needed to be proper training around the recognition of credible websites, something that O’Keeffe et al (2011) also refer to in their discussion of how health personnel recognise reputable websites.

Vlachaki and Urquhart (2010) have conducted research on the use of medical journals by Greek researchers, and of the prevalence of medical articles related to Greece in the main medical OA repositories. They conclude that there may be a need for a national repository for health information related to Greece specifically, which suggests that there is an overriding need for localised health information to be made available in one place for both health practitioners and researchers. This reflects positively on Lenus’ aim to become the primary online source of Irish health-related research. Chan et al (2009) similarly mention the need for local information to be made available to researchers and health workers, within the context of life-threatening illnesses which are specific to a country or region, something that is obviously imperative in health research.

Vlachaki and Urquhart (2010) also talk about the importance of organisational cooperation, citing examples of digital repositories which aim to collect information from across Europe. Lawton (2010) mentions that one of the main goals for the future of Lenus is to foster relationships with other organisations in order to be able to share information. OpenAire, the Open Access Infrastructure for Research in Europe (2010) highlights this need in a discussion of OA activities in Ireland, mentioning that despite research being conducted in organisations all over Ireland, there is no clear cooperation or mandate to share information amongst organisations. The National Steering Committee on Open Access Policy’s *National Principles for Open Access Policy Statement* (2012) has set out clear best practice guidelines and recommendations for moving forward with OA in Ireland.

Key external influences

Political environment: The HSE in its current structural state will be disbanded and replaced by 2014. As a result, it has been difficult for those behind Lenus to form and implement strategic initiatives with this level of uncertainty. As has happened previously, reforms mean the disbanding and merging of many different quangos, which may leave a great deal of information behind on organisations’ websites.

Economic environment: The global recession has greatly affected the Irish economy, leaving it very weak. This has resulted in the Croke Park Agreement, which has led to significant budget cuts and a recruitment freeze across all government organisations, including the HSE. This has had knock-on effects for the HSE libraries, although it was stressed in the interview with Aoife Lawton that time and human resources are more challenging factors than budget when it comes to managing the Lenus repository.

Social environment: OA is becoming more popular. However doctors and other healthcare professionals involved in research take some persuading in the area of OA because they are usually focused on publishing in the most prestigious journals.

Technological environment: New technology is being produced all the time, and will undoubtedly affect how digital material is collected and catalogued. Economic constraints may prevent these updates from being implemented for Lenus.

Other factors

Competitive environment: The Royal College of Surgeons (RCSI) has its own online repository, and as an organisation, they are on good terms with Lenus. RIAN, another online OA repository, provides publications from academic institutions, but has yet to build a collaborative relationship with Lenus. *Google* and *Wikipedia* also provide a source of information for many healthcare professionals.

Market influences: The publishing world is currently undergoing an enormous change, particularly when it comes to serials. Subscription costs for scholarly resources have increased dramatically, while library budgets remain the same or are decreased. As a result, there is a strong market for OA publishing.

Findings

Management has effectively dealt with the lack of resources by setting up procedures to ensure that each member of the Lenus service team has a specific focus in regard to finding content. They have set up alerts and RSS feeds to speed up these processes, and have delegated the sources accordingly. They are also conscious of the fact that it will benefit them to raise more awareness of the repository amongst possible contributors. One successful means of helping with this was for the National Director for Clinical Strategy and Programmes, Dr. Barry White, to send a letter to several hospitals calling for research to be made accessible through Lenus.

Management is very aware of the need for more training and the organisational culture is clearly supportive of learning; however at the moment their main source of funding for CPD or attendance at conferences is through the Irish Health Sciences Libraries Group. The limits of this are detrimental to the all-important process of lifelong learning by LIS employees, as well as having an impact on the level of marketing that can be done for the service.

One of the most important undertakings by management is to forge relationships with other health organisations and individuals:

- **Working Group:** The working group is hugely beneficial, not only in that it helps in regard to time taken to find and upload content but also because it means that there are more people aware of Lenus and interested in its overall development.
- **Competitors:** Again, this is another area where the management have worked well to forge relationships. The organisation is on good terms with RCSI and they are linked to the e-Pubs site and have links to the e-Pubs site on Lenus. They have become involved with sites that harvest content as previously mentioned. Content on Lenus is

accessible through Google searches, and therefore available to a global research community.

- **Open Access:** The Lenus team is very aware of the need for Open Access in healthcare research and have been heavily involved in pursuing an Open Access Mandate in Ireland. More recently Lenus staff has been involved with the National Steering Committee on Open Access Policy. The staff is also very passionate about the concept of Open Access information and is actively pursuing the goal for Lenus to become the major resource for Irish healthcare professionals and researchers.

Opportunities

The library service in the HSE is still regionally-based and there is a lack of direct communication between those responsible for HSE publications and Lenus. However, the upcoming changes in the landscape of healthcare in Ireland, especially in relation to the HSE reform and probable disbanding, may be seen more as opportunities than threats. Information services are often neglected in the discussion of structural change or reform, so that despite playing an integral role in the running of large organisations, they are constantly struggling to communicate their relevance. The opportunity should be taken now by all the HSE libraries to develop a coherent alignment of objectives and goals along the lines of best practice for LIS. The benefits to this would go far beyond Lenus, and demonstrate the innovative and adaptable approaches that HSE librarians are taking in challenging economic times.

As the literature review has outlined the importance of a central OA repository for Irish-related healthcare publications, it is hoped that the work of Lenus will continue to be supported and marketed. Budget cuts and the moratorium on public service recruitment clearly pose a threat, not only to Lenus. However, OA goes some way towards tackling the rising costs associated with academic publishing. Universities and hospitals pay huge amounts of money to access online journals and OA could allow for the transfer of such spending to other areas where it is needed. Technology and technical training could be one such outlet, as there are long-term savings to be made in regard to time and resource management. This is important not only for Lenus management and staff but also those healthcare professionals who need to easily obtain timely and relevant information for their patient care.

The branding and marketing of Lenus is of the utmost importance, and was highlighted by the staff themselves during the interview and survey process. As the future name of the HSE is in doubt, Lenus is at a distinct advantage in that the brand will not always be directly associated with the Executive. The name Lenus also reflects the staff's more ambitious goal for the repository to be the one main source of Irish-related health publications. Marketing Lenus successfully will mean that doctors and other healthcare professionals will be more inclined to share and use the research available for their own work, improving the levels of evidence-based practice in Ireland. This is of enormous benefit to patients all over Ireland. The LIS employees are, however, aware of their own limitations when it comes to developing a marketing strategy (regarding both expertise and sheer lack of time and resources) and have stressed the need for a strategic steering committee to be set up within the HSE to help with this.

Recommendations

Based on the findings and literature review carried out as part of the case study, the following recommendations are made:

- The working group should be expanded so that more researchers can be made aware of and encouraged to upload their publications and articles directly to the repository. This will ensure that Lenus staff can spend less time searching for content and more time cataloguing and editing the site.
- A more aggressive marketing strategy should be developed to promote research contributions to this repository in the future. This might involve dissemination of leaflets and brochures to hospitals and community-based healthcare organisations and more presentations by LIS staff at relevant conferences. The move by Dr. Barry White, National Director, Clinical Strategy and Programmes, to send a letter to hospitals to raise awareness of Lenus was a strategic success and should be expanded.
- The challenge of partnering with other Irish health-related repositories and university research repositories must also be addressed to expand the scope and availability of material. Informing students about Lenus and encouraging its use in universities would be a major boost for Lenus as trainee healthcare professionals would be aware of the service and more likely to contribute research into the future.
- A new strategic plan must be developed in light of the recent nationwide Open Access Mandate. A strategic steering committee or advisory group should be established within the HSE (or whatever the HSE is to become) to ensure that the future of Lenus is developed along the lines of best practice with regard to both OA and evidence-based healthcare.
- Lenus needs more support with regard to the Special Collections section. The digitisation and cataloguing of old printed material is a time-consuming and specialised process, and while it is still deemed worthwhile to include such healthcare-related publications on the website, the responsibility should really be delegated to a professional archivist.

Conclusion

It is a time of great change for information organisations. For those working in the public sector in particular, challenges have arisen with regard to falling budgets, hiring freezes, overstretched resources and the pressure of structural reforms. At the same time rapidly evolving information technology is completely altering the way that academic and professional research is produced, preserved, accessed and shared. Soaring costs for scholarly journals pose a distinct problem for information organisation, which have to move and adapt quickly in order to retain their relevance and integral role within larger institutions like the Health Service Executive.

One particularly innovative and forward-looking measure that has been taken by libraries – particularly health science libraries – is the introduction of online OA repositories, like the

HSE's Lenus. As a freely accessible database of health-related articles, theses and abstracts from both HSE and non-HSE sources, Lenus goes beyond that of a single institutional repository (such as those of universities) in its goal to become the main source of Irish health-related publications for researchers and practitioners. One of the driving forces of this OA movement is to promote evidence-based healthcare practice by ensuring that doctors, psychologists and others in the health sector have quick, easy access to relevant research that they can use directly in their work.

The creation and operation of Lenus in such a period of flux is demonstrative of the HSE Library Service's willingness to adapt to remain in line with current best practice regarding both Open Access and evidence-based healthcare. The ambition and passion of the small team involved was clear from the interview and surveys carried out during the research process, and it is hoped that they are efficiently and strategically supported by all levels of management in order to meet their goals for the future. Lenus has the potential to have an enormous impact not only on the Irish research community, but on the health and well-being of all citizens.

References

- Barbour, V., Chinnock, P., Cohen, B., & Yamey, G. (2006). The impact of open access upon public health. *World Health Organization. Bulletin of the World Health Organization*, 84(5), 339.
- Chan, L., Arunachalam, S., & Kirsop, B. (2009). Open access: a giant leap towards bridging health inequities. *World Health Organization. Bulletin of the World Health Organization*, 87(8), 631-635. Retrieved from <http://eproxy.ucd.ie/login?url=http://search.proquest.com.eproxy.ucd.ie/docview/229592689?accountid=14507>.
- Jamieson, G. (2004). Open access: the future of academic publishing? *Cardiology in the Young*, 14(5), 471-472. Retrieved from http://journals.cambridge.org/abstract_S1047951104005013.
- Lalor, K. (2009). In Praise of Repositories and Open Access: Editorial. *Irish Journal of Applied Social Studies*, 9(1), 3-5. Retrieved from <http://arrow.dit.ie/ijass/vol9/iss1/2>.
- Lawton, A. (2010). Lenus: from healing God to Health Repository. *Lenus - Irish Health Repository*. Retrieved December 10, 2012, from <http://www.lenus.ie/hse/bitstream/10147/87086/1/Lenus.pdf>
- Lu, H., Andrews, J. E., Hou, H., Chen, S., Tu, Y., & Yu, Y. (2008). Factors affecting online research by nurses in Taiwan. *Online Information Review*, 32(5), 574-584. Retrieved from www.emeraldinsight.com/1468-4527.htm.
- National Steering Committee on Open Access Policy (2012, October 23). National Principles for Open Access Policy Statement. *Trinity College Dublin - The University of Dublin, Ireland*. Retrieved December 10, 2012, from

[http://www.tcd.ie/Library/assets/pdf/National%20Principles%20on%20Open%20Access%20Policy%20Statement%20\(FINAL%202023%20Oct%202012%20v1%203\).pdf](http://www.tcd.ie/Library/assets/pdf/National%20Principles%20on%20Open%20Access%20Policy%20Statement%20(FINAL%202023%20Oct%202012%20v1%203).pdf)

O'Keeffe, J., Willinsky, J., & Maggio, L. (2011). Public Access and Use of Health Research: An Exploratory Study of the National Institutes of Health (NIH) Public Access Policy Using Interviews and Surveys of Health Personnel. *Journal of Medical Internet Research*, 13(4). Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3236667/>.

The OpenAIRE Consortium (2010, February 23). OA in Ireland. *Open Access Infrastructure for Research in Europe*. Retrieved December 10, 2012, from <https://www.openaire.eu/en/open-access/country-information/ireland>

Vlachaki, A., & Urquhart, C. (2010). Use of open access journals in biomedicine in Greece. *Library Management*, 31(1/2), 19-26. Retrieved from www.emeraldinsight.com/0143-5124.htm.

Willinsky, J., Murray, S., Kendall, C., & Palepu, A. (2007). Doing Medical Journals Differently: Open Medicine, Open Access and Academic Freedom. *Canadian Journal of Communication*, 32(3/4), 595-612.

Zhang, D., Zambrowicz, C., Zhou, H., & Roderer, N. K. (2004). User Information Seeking Behavior in a Medical Web Portal Environment: A Preliminary Study. *Journal of the American Society for Information Science and Technology*, 55(8), 670-684.