Almost a decade ago, we began investigating on research support services in academic libraries. Back then, the development level of these services was at a very early stage, and they were beginning to emerge as a differentiated reality of other services in some libraries. Since then, progress has been made at the theoretical and practical level, but there is still a long way to go.

Throughout our research, it was evident that the efforts made by libraries were not always reflected in the scientific literature. Analyzing their websites allows us to conclude that the way in which these services are presented is not always a faithful depiction of the reality and even less of the perception the librarians who offer them have about these services.

Research support services are considered under a broad approach, it means all those that are oriented to support the various processes of scientific communication. It is impossible to find two identical university research strategies and two identical university libraries, which is why their research support services are unique and sui generis.

The very concept of research support services implies plurality. Each library interprets and adopts a way to do it, always in line with their university's research strategy in addition to the very socio-economic conditions and scientific policy of each country. All this highlights this heterogeneous character.

Reflecting this variety is a central element of this book that aims to overcome that literature gap. Its purpose is to provide an overview of the current state of research support services, and a glimpse and reflection from the libraries' perspective. This intends to provide an understanding of the know-how, philosophy, organizational models and resources of university libraries located in different countries.

In order to provide this accurate and close snapshot, the case study format was chosen to value this reality. This practical approach, however, does not make us lose perspective of the importance of the theoretical one. The information dispersion in the academic libraries' websites, in itself, points to the need for a greater and better conceptualization of these services.

The truth is that research support services include a variety of services that serve different stages of scientific communication. Its plural use has to do with its evolution. Over time, services were created to meet different researchers' needs and the designation and grouping of these benefits happens later by using an umbrella designation.

Each academic library presents its own services catalogue and organizes it according to its own vision, which is not the case with other library services that have a more global and standard conception. There are two other distinct traits to add:

- 1. A service can be part of this umbrella designation or be managed independently.
- 2. Some of the services involve other university services, thus creating a double affiliation.

This situation requires an in-context reading, that is, the offering of research support service in libraries are a reflection of a university's research strategy and policy, its organizational culture and the social, economic, and scientific environment in which a higher education institution is inserted.

In the search for an appropriate balance between the singular and the general, a work scheme complementary to the formal structure of the case study was prepared. This scheme was intended as a flexible model to allow authors to have a logical reference in their reflection process, ready to adapt to multiple library environments, with variable order and with the ability to include new sections whenever necessary.

The editors considered that, beyond formal issues, it was essential that texts reflect the identity of its authors and their libraries. The crucial factor was to persevere in the purpose of the book. That is, to acknowledge the various ways in which libraries have addressed the need for these services and to answer a crucial question: How library research support services contribute to the quality of university research results because, in fact, the main focus is to value these services concerning their users, their institution, and their country.

The work scheme served three aspects.

- 1. The context in which the service is developed by seeking, precisely, the alignment of the work done with the strategies and values of the university and the library itself.
- 2. The different elements of research support services appear, as it is evident in many texts, as a star service.
- 3. The projection into the future.

In detail:

### Context

- The university.
  - Brief history of the university.
  - General description of its mission, organizational structure, academic offer, etc.
  - Research.
  - Highlight of university values, particularly those related to research.
  - Any other relevant information.
- The library.
  - General features, mission, vision, values, objectives, history.
  - Facilities.
  - Staff, organigram, organization structure.
  - The library system(s) or network in the organization.
  - Users (number, typology, etc.)
  - Library services provided.
  - Any other relevant information.

# Research support service

- Background.
  - What are the milestones that establish a paradigm shift between traditional research support activities and a new conception of service?
  - When does this change occur?
  - How do these services respond to a strategy of the university and the country?

- Definition.
  - What are research support services based upon your academic library experience?
  - What services are included?
  - Brief description.
  - How traditional services are integrated with new ones (i.e. reference services and data management)?
  - If there are several libraries in your system, describe whether services are centralized, decentralized, or mixed. A general overview is sought.
- Strategic planning of the research support service.
  - Is there a global conception of service or is it a set of services that are organized on the website for easier finding?
  - Does it have a person responsible for this service (director, head of unit or area...)?
  - Is there a unit or department clearly defined and named as such?
  - Does it have allocated resources?
  - Does it have a place or office?
  - Does it have its planning documents?
  - Is there a mission or goal defined for the service?
- Target.
  - Who are the users?
  - Potential and actual users.
  - Is it addressed only to academics or it also includes other groups?
  - Are there different features for different types of users within the service?
- Spaces and infrastructures.
  - Did service involve or will it require a redesign of the physical space of the library?
  - Do services occur only in a virtual space?
- Staff.
  - How many members?
  - Are there library profiles in your library such as liaison librarian, embedded librarian, advanced research assistant, research librarian, expert librarian or research data librarian?
  - Have these profiles been developed as a result of the research support service?
  - Reflect on their functions and usefulness.
  - Overview.
- Relations with other areas of the university.
  - Are research support services in the library connected to or dependent from, an organizational level, on other university offices or services?
  - What activities are shared among them?
  - Is there a strategic collaboration?
- Evaluation of service performance.
  - Is there any research support service evaluation activity?
  - If this evaluation has not been developed, it can be dealt with in the item on challenges.

## **Future and Conclusion**

- General assessment.
  - Strengths and weaknesses of your research support library.

- Prospect.
  - How is the future planned?
  - Short and long term changes.
  - New strategies.
  - New features.
  - Challenges.
- Main conclusion.
  - Consideration of how your library contributes to the research activity at the university.
  - Is the academic library a key factor in research success?
  - Do the academic library research support services have evidence of their impact on the university's research activity?

Each of the case studies has been written by those who know best its reality, those who make decisions, and those who provide the service. These intra-stories are perceived in the texts; quality has also been guaranteed with a double-blind peer review. In the assignment of reviewers, it has been tried to combine, as much as possible, a complementary evaluation of library professionals and faculty members.

An element that transcends throughout is its marked international character with 13 contributions from a variety of regions: America (Canada and Brazil), Oceania (Australia and New Zealand), Asia (China and Singapore), and Europe (Hungary, Lithuania, the Netherlands, Portugal, the United Kingdom, and Spain). The work aims to show this diversity of realities by offering visions from different world areas. Texts are a combination of pioneering libraries but also from libraries with newer experiences that move towards finding solutions.

This international approach is maintained for reviewers and Editorial Advisory Board members. There have been a total of 15 reviewers from Bosnia, Brazil, Serbia, Spain, Mexico, the Netherlands, Portugal, Lithuania and the United States. To which must be added the members of the editorial board, from Australia, Portugal, South Africa, Spain, and the United Kingdom.

The volume is organized into four sections that group its 13 chapters. These sections are a representation of the continents covered in the book, starting with Europe, as the region with the largest number of contributions. In order to facilitate the search, each section has been arranged in alphabetical order by the last name of the first author.

An approach to each chapter is presented here, in the order in which they will be found. Each country, university, library, research service has its own particular value. We aim to reflect the main idea to encourage readers to "visit" all of them.

# Europe

Chapter 1: A rich group of authors composed by Shaghayegh Abdolahzadeh, Peter G. Braun, Christina Elsenga, Marijke Folgering-van der Vliet, Babette Knauer, Ane W. van der Leij, Fareeba Sheedfar, Giulia Trentacosti and Kathryn O. Weber-Boer presents the case of the University of Groningen Library. Policies from the new government in the Netherlands offer libraries opportunities for change and improvement. The University of Groningen, founded in the 17th century, is the alma mater of two Nobel Prize recipients, of the first Dutch astronaut, the first female student and the first female lecturer in the Netherlands.

Its commitment to open access and, in particular, its Research Data Services, is particularly noteworthy with its development of a Library Data Warehouse.

Chapter 2: Paul Ayris exposes the case study of the University College London Library. The UCL holds one of the top positions in several international academic rankings and is the alma mater of 29 Nobel Prize winners. It is the third oldest university in England and was founded in 1826. The UCL has a total group income of £1,450 million, of which £476.3 million come from grants and research contracts, evidence of the importance of its research facet. The library service, founded in 1829, consists of 17 libraries spread throughout London and beyond. By 2020, the Library's collection will amount to over 2 million items. The UCL is very active in supporting research, in particular the implementation of Open Science policy and practice. The Library has taken the lead in the University across all eight areas of Open Science, they are, the Future of Scholarly Communication, the EOSC, FAIR data, Skills, Research Integrity, Rewards, Altmetrics, and Citizen Science.

Chapter 3: Ieva Cesevičiūtė and Gintarė Tautkevičienė present the development experience at the Kaunas University of Technology. This Lithuanian university is one of the largest technical universities in the Baltic region. One of the main strategic lines of the university is sustainable development, which has earned it its inclusion in the Quality System of Science and Technology Universities for Sustainable Industry (QUESTE-SI) of the European Union. The University Library is one of the largest academic libraries in Lithuania. The Research Information Service was established in 2015 and focuses its activities on open science and open access, and participates in several European projects. Support to research data management is an essential component of the service, where the creation of a data management plan and the improvement of collaboration among stakeholders are the immediate challenges.

Chapter 4: The Universitat Politècnica de Catalunya specializes in science and technology, covering a wide range of fields in engineering and architecture. The quality of its research has placed it in a good position in national and international academic rankings. It has a complex library system with a staff of 120 people in 12 libraries spread throughout Catalonia. The research support services offer a wide range of products and services with a service strategy focused on customization and a strong commitment to technology and online services. Satisfaction and impact indicators confirm their success. In 2019, the UPCommons institutional repository had 3,413,386 visits and 9,944,818 downloads. This chapter was written by Miquel Codina-Vila, Ruth Íñigo, Anna Rovira-Fernàndez and Marta Serrat-Brustenga.

Chapter 5: The Writing Center is the only institution of this type in Hungary and has been developed at the Corvinus University Library in Budapest. Monika Fischer, Halm Tamás and Tibor Koltay deepen in this service that, with a renewed vision, offers support to diverse areas of scientific communication, with special emphasis in the publication of research results. Publications are the fundamental means of transmitting research results, and a scientific text requires certain elements to fulfill its function. This service puts a special focus on early career researchers. Based in Budapest with 72 years of existence, the university has a clear vocation towards internationalization.

Chapter 6: The Research Support Services of the University of Porto Libraries is presented by Augusto Ribeiro, Luís Miguel Costa and Palmira Fernandes Seixas. The University of Porto, formally founded in 1911, is one of the largest universities in Portugal, with 51 research units that become one of the leading producers of science in the country. It has 242 active patents and 245 spin-offs or start-ups. Its internationalization strategy makes it present in different international academic rankings. U.Porto Libraries are made of up to 17 units that offer a wide range of centralized and proximity services aimed at supporting the various stages of scientific communication. A closer relationship with researchers and a marketing approach are two lines of improvement.

Chapter 7: Seville is the setting for the experience provided by Ángel M. Vázquez in his text. The Pablo de Olavide University is a young Spanish public institution founded in 1997. The Pablo de Olavide University Learning and Research Resource Center (LRRC) carries out research support activities along two different lines: the User Training Service and the Bibliographic Information Service. In the first of these services, attention to young and early career researchers stands out, being training in informational and digital skills its central axis. This chapter shows how the national policy of research and higher education defines the library's orientation and actions.

# **America**

Chapter 8: Paraná is one of the twenty-seven states that make up the vast territory of Brazil where the Universidade Federal do Paraná (UFPR) is located. It is the oldest public university and also one of the largest in the country, with 50,000 people involved in its community. UFPR has 19 libraries on different campuses, one of which is the Law Library. Its research support services are presented in this chapter by Paula Carina de Araújo and Karolayne Costa Rodrigues de Lima. This research support service, established in 2009, offers research support courses, support for bibliographic research, and guidance on the use of research tools. This service can be considered a pioneer in its country, and its evolution is closely linked to collective and cooperative work.

Chapter 9: InfoExpress Service is a personalized service to support researchers where the human factor is the central axis. This experience from the University of Toronto, Canada, is the contribution of Manda Vrkljan and Adrienne Findley-Jones to this book. In a large decentralized library system like the one in the University of Toronto, small academic libraries, such as the John M. Kelly Library and the John W. Graham Library, have an advantage in terms of proximity between libraries and researchers. They highlight the necessary promotion of services as future actions, and also, the required collaborative relationships with other university services related to research support.

### Asia

Chapter 10: Fang Chiong (Patrick) Pu, Su Yian Kho, Ke Khoon Low, and Amy Chou present the experience of the National University of Singapore. This is the oldest higher education institution in the country, founded at the beginning of the twentieth century with approximately 41,000 students, 2,500 faculty members, and 4,100 researchers. The National University of Singapore (NUS) Libraries have eight physical libraries supported by 146 staff members. The perfect alignment with the university's strategic objectives has led the NUS Libraries to create the Researcher Unbound (UK), which targets the university's early-career researchers and graduate students. This service is the NUS Libraries' flagship program, and is aimed at improving research skills and capabilities mainly through training activities. The satisfaction and impact data resulting from this program show its success. The strength of this service seems to be linked to a line of action leading towards the online context.

Chapter 11: Yong Tang and Chunhong Zhang discuss organizational restructuring and development at the Peking University Library in 2019. The Collaborative Service Center (CCS) was established to provide research support services. The integration between theory, as an operational element, and practice is emphasized. Similarly, seven specific projects developed from the library are detailed. The interrelationship of the library's work with the research strategy of the Peking University and that of the country

is clearly perceived. The Peking University Library is the largest university library in China and serves annually, according to data from recent years, over 2 million users in person and over 1.8 million online.

### Oceania

Chapter 12: Belinda Weaver and Joanna Richardson showcase the new scenario of the Griffith University Library (Australia) after the renovation of its services in 2019. The chapter is a clear reflection of the development and how the changes in the university were the starting point for a reformulation of the research support services with a well-defined strategy that focuses on data management, research metrics, open scholarship, and data wrangling. The new professional profiles stand out. Throughout the text, there is a clear orientation towards the Higher Degree by Research (HDR) students.

Chapter 13: Trish Wilson, Aubrey Kirkpatrick, Katy Miller, and Marcus R. Harvey present the experience of the Te Herenga Waka - Victoria University of Wellington library (New Zealand), a university founded in 1897. In this chapter, a comprehensive and innovative management model is revealed. It highlights a strategy to involve library staff in research support services and how the development of specific profiles, together with staff assigned to these services, acts as a driving force for the further enhancement of the service. This chapter shows the important changes derived from the restructuring carried out since 2018 whose main challenges are research funding acquisition and internationalization.

All chapters, as well as the review process have been learning opportunities. Reading the texts helps recognize familiar and shared terms, processes and concepts but, at the same time, has the great virtue of transporting the reader to unknown scenarios in which a form of university, and a scientific culture of its own, is translucent.

This work is aimed at library professionals and is intended to be a guide to implement or to evaluate the implementation of services. The book is also conceived as a management tool so that those in charge of these services at the universities have a more accurate look at what is done in the library. Hopefully, this will provide them with higher and better criteria to make appropriate decisions and establish pertinent strategies for the libraries.

Academics and researchers are an equally important audience. The editors hope that, for them, reading these practical experiences will help to develop theory and serve as a starting point for reflection and debate. And, for students, future professionals, it will make an inspirational book because this work is a good example of how university libraries contribute to the excellence of their universities and to the development of society as a whole.

A few words should be devoted to the context of this book. We can say that it has been worked in "the time of the COVID-19". Its conception began much earlier and the first invitations were sent as early as October 2019 followed shortly after by a call for chapter. By January 2020, editors already had a list of proposals but, in mid-March, what was initially an epidemic became a pandemic, thus affecting the personal and professional lives of all participants in the project. Fortunately, this was no impediment for this finally coming to fruition.

In this period of pandemic we realized how science and research, their processes and times, were also affected in many ways. Society as a whole recognized the need for a robust science to be entrusted with this threat, but a science far from its normality, an accelerated science, focused on a clear and priority goal, with an influence on scientific communication in two fundamental aspects: the remarkable increase in publications and the variation of open access.

In these months there has been a multiplication of papers at speeds never experienced before; new tools and databases have been developed; the review and publication processes have been accelerated; there has been an intense debate on the value of preprints and the process of double-blind peer-review; the importance of disseminating scientific results has been highlighted by temporarily opening collections of large publishers but also through the claim of open access. Perhaps most importantly, the extent to which all this, and especially open science, has reached all levels of society.

When the book is brought to life, it is very likely that we are still at some stage of this health crisis. The search for a solution is demonstrating the value of science, research and researchers as well as the need to improve communication between them and, especially, social outreach. Academic libraries reduced their activity, especially in the on-site activities, but quickly resumed online services. Their importance as enablers has been demonstrated and it has become clear that research support services will be strengthened in this context.

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