

OAI Service providers: Enhancing the visibility of research in Malta

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The first Institutional Repository in Malta, OAR@UoM was launched in September 2014. Over the course of the following two years the repository has grown significantly - in terms of the quantity of deposited material, which varies from articles and book chapters to audio recordings and presentations, as well as in terms of usage. In fact, as of the end of 2016, OAR@UoM holds well over 12.000 individual items in its collections, all visible and discoverable online through indexing by Google. In addition, nearly half of the entire content of the repository (44%) is currently available in Open Access without any restrictions.

To further enhance the visibility of Maltese researchers and academics as well as their works, the University of Malta's institutional repository has been registered with several key Open Archives Initiative (OAI) service providers.

OAI service providers

The Open Archives Initiative was established in 1999 with the singular goal of developing and promoting technical interoperability standards which would aid effective dissemination and sharing of metadata. The OAI introduced a simple technological framework based on metadata harvesting that would consist of two types of participants: data providers and service providers.

The service provider is an internet platform created and managed by a scientific entity (individual, institution or organisation) which employs the Open Archives Initiative Protocol for Metadata Harvesting (also as an abbreviation OAI-PMH) to gather metadata records of primary documents from the data providers, i.e. institutional repositories and digital archives. In order for the OAI service provider to harvest metadata successfully, the data provider has to expose these in an OAI-PMH compliant manner.

The collected records are then used to build a structured metadata database equipped with a search system, user interface and a wide array of value-added services.

The OAI service providers are freely accessible to any interested parties. Their functionality is similar to that of a search engine: users can apply their keywords in either a simple or advanced search interface or use the browsing option (when available) in order to retrieve materials on a particular topic. The harvested metadata record then allows them to connect directly to the primary document in the source repository.

The benefits and advantages of OAI service providers for the Maltese academic community are numerous. First and foremost, they enhance the transparency and reach of scientists as individuals and their respective works. Secondly, they also significantly augment the

visibility of University of Malta, greatly increasing the chances of establishing new collaborations with international entities and presenting new funding opportunities for research on local level. Thirdly, the OAI service providers support the development of the institutional repository by creating comparative reports using various statistical and analytical tools.

OpenAIRE portal

The OpenAIRE portal was the first OAI service provider in which OAR@UoM was included. The portal represents the technological backbone of the OpenAIRE2020, a large-scale EU initiative, which aims to promote open scholarship and improve the discoverability and reusability of research data. The OpenAIRE platform is vital for inter-connecting and managing research outputs stored in various archives, repositories and data storages across Europe.

The screenshot displays the OpenAIRE portal interface. At the top, there are navigation links for 'PARTICIPATE', 'SEARCH', 'MONITOR', 'SUPPORT', and 'OPEN ACCESS'. The main content area features a metadata record for a research article by Ms Anna Zammit. The record includes the following information:

- Title:** Hospice Malta
- Publisher:** Malta College of Family Doctors
- Languages:** English
- Types:** Article
- Subjects:** Hospice care, Terminal care -- Malta, Hospice care -- Malta

The abstract text reads: "Hospice Malta is a voluntary organisation inspired by Christian values. It exists to provide and promote the highest standards of palliative care for persons with cancer, motor neurone disease and other terminal disease. It also aims to help and support their families. Palliative care in Malta is offered free of charge by Hospice Malta in the community, day therapy unit and through hospital support. There is also an in-patient palliative care unit in Boffa Hospital where patients are admitted for symptom control or during the terminal phase." Below the abstract are two red buttons: 'LINK TO PROJECT' and 'LINK TO RESEARCH DATA'. To the right of the record, there are options to 'SHARE - BOOKMARK' (with social media icons), 'DOWNLOAD FROM' (listing OAR@UoM), and 'CITE THIS ARTICLE' (with a BibTeX citation: '@misc{Zammit, Anna_2014, title={Hospice Malta}, publisher={Malta College of Family Doctors}, author={Zammit, Anna}, year={2014}, month={Nov}}'). At the bottom, there are links for 'References (0)', 'Related Research Data (0)', and 'Similar Publications (0)'. A search sidebar on the right shows a dropdown menu with 'Publications, data, projects, ...' and a list of search categories: 'all', 'publications', 'research data', 'projects', 'people', 'organizations', 'data providers', 'Data Providers', and 'General Information'.

Figure 1 - A sample metadata record of a research article by Ms Anna Zammit in OpenAIRE

By the end of 2016, the OpenAIRE portal provided access to over 17,5 million metadata records, harvested from 5,789 institutional repositories and Open Access journals. In addition to standard searching and browsing capabilities, the portal currently offers several valuable services:

Personal user account: All users can create and manage a free account. Apart from the linking of publications and registering repositories (see below) this also allows them to claim their own publications or research data and set their access rights.

Linking of publications: Registered users can easily link publications and research datasets with their respective projects and bodies that funded them.

Repository register and validator: Repository managers are able to validate if their repository is compliant with the OpenAIRE portal, and register it using a simple form.

Zenodo: The portal offers a so-called ‘orphan’ repository which enables academics, who are not affiliated with any university or institution to upload their research.

Open Access monitoring: Detailed statistics let users monitor the quantitative development of Open Access in Europe.

BASE: Bielefeld Academic Search Engine

In June 2016, OAR@UoM has been added to BASE: Bielefeld Academic Search Engine. BASE was launched in September 2004 by the Bielefeld University Library in Bielefeld, Germany and today it can be considered one of the most successful and utilised OAI Service providers in the world. As of the end of last year, the metadata database of BASE held over 103 million records, which have been collected from nearly 5,000 data providers.

The screenshot displays the BASE search engine interface. At the top, there is a navigation bar with the BASE logo and links for Mobile, language selection (English), and Login. Below this are tabs for Basic Search, Advanced Search, Help, Browsing, and Search History. The main search area shows a search box with 'hospice malta' entered, a dropdown menu set to 'Entire Document', and a 'Find' button. There are also options to 'Boost open access documents' and 'Linguistics tools' (Verbatim search, Additional word forms, Multilingual synonyms). A 'Statistics' box shows 27 hits in 107,844,538 documents in 0.33 seconds. Below the search area, a breadcrumb trail reads 'Home » Search: hospice malta'. The main content area is divided into a 'Hit List' and a 'Sort Your Results' section. The 'Hit List' shows a single result for '1. Hospice Malta' by Ms Anna Zammit, with an 'Open Access' icon. The metadata includes Title, Author, Description, Publisher, Year of Publication, Document Type, Language, Subjects, Rights, URL, and Content Provider. The 'Sort Your Results' section has a dropdown menu set to 'Relevance'. Below this is a 'Refine Search Result' section with dropdown menus for Author, Subject, Dewey Decimal Classification (DDC), Year of Publication, Content Provider, Language, Document Type, and Access. At the bottom, there is a 'More Options' section with links for Search History, Get RSS Feed, Get ATOM Feed, Email this Search, and Save Search.

Figure 2 - A sample metadata record of a research article by Ms Anna Zammit in BASE

BASE offers two types of value-added services - for end-users as well as for database and repository managers. The former type of services includes:

Personal user account: All visitors are given the option to create and manage a personal account which also allows them to save items retrieved during their search sessions as well as the sessions themselves.

Multilingual search with synonyms: The search in BASE can be conducted with the integrated Eurovoc thesaurus which offers synonyms from 21 different languages.

Search plugin: BASE offers a simple search plugin which can be integrated with most commonly used web browsers (Internet Explorer, Google Chrome and Mozilla Firefox) and allows for direct search of the metadata database.

Search box: Using a specific part of the source code, website managers may incorporate a fully customisable search field for BASE into their homepage.

Mobile platforms compatibility: Smartphone and tablet users can make use of the mobile version of the website. Android, IOS as well as Windows Phone are all supported.

Repository managers can exploit the following services:

API for local infrastructures: The BASE index can be merged with local infrastructures such as library catalogues via the Application Programming Interface (API).

OAI-PMH validator: The system provides OVAL, the BASE OAI-PMH Validity Checker, that verifies the compliance of the repository's OAI-PMH interface.

OAI-PMH blog: The blog reveals information pertaining to harvesting and aggregating activities of BASE.

CORE: COnnecting REpositories

At the beginning of November 2016, OAR@UoM was registered with CORE: COnnecting REpositories. CORE was created in 2011 by a team of experts from the Knowledge Media Institute at the Open University in United Kingdom. Despite its relatively short existence, this OAI Service provider currently contains over 66 million metadata records accumulated from more than 2,300 repositories and digital archives from all around the world.

Unlike the two aforementioned OAI Service providers, CORE harvests not only the metadata records of articles, research papers and other types of scholarly material but also their full-texts, which greatly amplifies its value for the scientific community. Upon entering the system the aggregated content is enriched by text and data mining.



Search 69,171,394 open access articles

Search



Hospice Malta

By Anna Zammit

Abstract

Hospice Malta is a voluntary organisation inspired by Christian values. It exists to provide and promote the highest standards of palliative care for persons with cancer, motor neurone disease and other terminal disease. It also aims to help and support their families. Palliative care in Malta is offered free of charge by Hospice Malta in the community, day therapy unit and through hospital support. There is also an in-patient palliative care unit in Boffa Hospital where patients are admitted for symptom control or during the terminal phase.

Topics: Hospice care, Terminal care -- Malta, Hospice care -- Malta

Publisher: Malta College of Family Doctors

Year: 2014

OAI identifier: oai:www.um.edu.mt:123456789/4493

Provided by: OAR@UoM

Downloaded from <https://www.um.edu.mt/library/oar/handle/123456789/4493>

[Get cached PDF \(117 KB\)](#)

Location of Repository



Figure 3 - A sample metadata record of a research article by Ms Anna Zammit in CORE

CORE provides a wide variety of invaluable services, such as:

CORE API: Two versions of the API are offered - REST API which supports searching and downloading documents and extracting the subject from the text, and SPARQL endpoint which presents information about harvested content.

CORE Dataset: The entire metadata and full-text database can be downloaded in the form of compressed datasets.

Repositories Dashboard: The service aims to improve the transparency and quality of the aggregation process through an online interface where the data providers are able to learn valuable information regarding metadata updates, harvesting frequency and statistics.

CORE Recommender plugin: The plugin can be installed directly in the repositories and archives and its main function is to recommend articles based on their semantic similarity.

CORE Mobile: The free mobile application is aimed at smartphone and tablet users regardless of the operating system. It ensures the same functionalities as the desktop version of the portal.

Conclusion

It is without a doubt that the OAI Service providers play an invaluable role in the process of communicating and disseminating information in the area of science and research. Their importance lies in the integration of various sources of primary data (institutional repositories, digital archives and digital libraries) and providing access to this data via a single interface equipped with a variety of additional services.

Making OAR@UoM compliant and registered with the most significant OAI service providers directly increases the readership, impact and visibility of scholarly works and research produced by local academics, whilst advancing Open Access in the Maltese research landscape. However, to be able to take advantage of the above outlined benefits, Maltese researchers must primarily deposit their work on OAR@UoM.