Digital Research Repository

Background

With the adoption of new technologies, it has become easier to develop solutions to simplify data collection, organization and dissemination so as to make information use more widespread and effective. New technology and tools have made it easier for academic institutions to collect, preserve, and reuse content produced in teaching, learning and research. With the developments in ICT, the emphasis is more on research outputs and collaboration. The digital content being created by members of the academic community is now being recognized as an institutional asset with the emphasis being on research outputs and collaboration.

In this context, NCIDE created a Prototype Digital Research Repository for the faculty and student community to encourage interdisciplinary research, teaching and service. The digital research repository was aimed at fostering the creation and use of digitized resource collections and resources of interest to the university community, thus improving teaching and learning through pervasive access to information.

Need of the Innovation

A large number of research papers, journal articles and reports are being brought out by the academics and researchers at IGNOU. But presently, it is being noticed that there is no single platform where the author and/or the Research Unit could archive all such articles/papers to provide an easy access to other faculty members for reference/policy making, etc. Keeping this in view, NCIDE proposed to set up a digital repository of the research papers, articles and reports being brought out at the IGNOU through single platform.

The project was highly appreciated by the then Director of Research Unit and the work was proposed to be carried out in collaboration with the Research Unit. The research repository was to consist of digitized collection of research papers, documents and reports being brought out by the IGNOU community. The portal was to provide easy single point access to research material and resources, and was to be available for use at anytime, anywhere by its students, staff and faculty. It was also proposed by the Research Unit that the project should be extended to include other operational aspects of the Research Unit for stream lining and facilitating the easy availability of research related data and information.

Description of the Innovation

A digital archive containing the details of published research produced by university faculty, students and researchers was created. The repository was designed to provide easy access to various significant resources like: Research papers/articles and reports submitted by IGNOU faculty and students. The repository was created using open source software. The software software running on Linux consisted of (postgres/Oracle) Database. The Sendmail server was used for communication. The software has three main components :

i. **The Application Layer :** This layer consisted of the web interface, registration tools, media filter, the statistics tools, and protocols for search and retrieval. There are different interfaces : i) for submitters and others involved in the

submission process, ii) for end-users looking for information, and iii) for system administrators.

ii. **The Business Layer :** This layer consisted of the application and tools for content management, workflow management, administration, and authorization. This layer served to accommodate the differing submission workflows needed for a multidisciplinary system and managing all types of content.

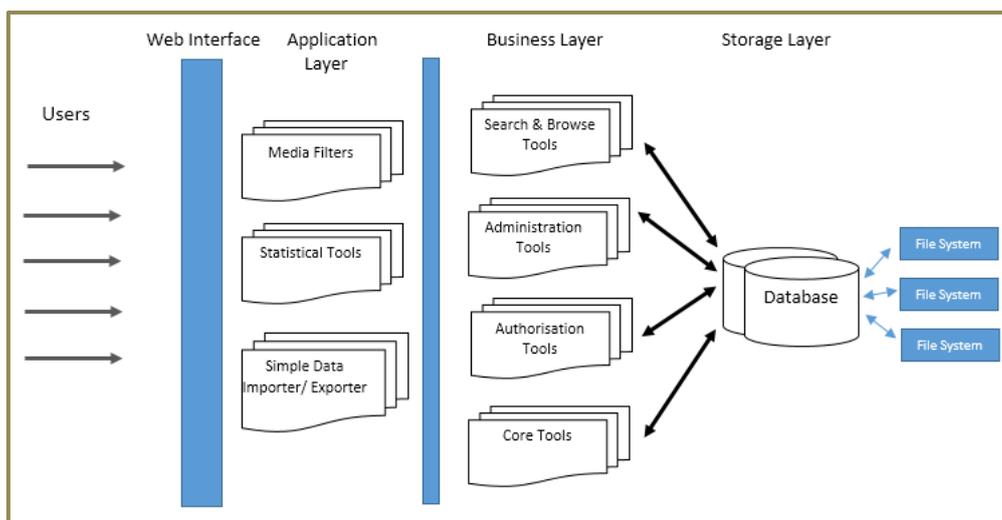iii. **The Storage Layer :** This layer consisted of the databases, file systems and other storage resources.

Figure 1 : System Architecture

The entire system has three modules :

- **User Module :** This will have facilities to search, browse and view the collection by the users.

- **Administrative Module :** This will have facilities to upload the digital documents into the repository and manage the content.

- **Researcher Module :** This will enable the authorized university academics and researchers to upload their research papers directly into the research repository.

The main components of the project were :

- **Design and Development of Research Repository :** A repository and database was developed using Open source software.

- **Collection of Data :** All the research materials and research papers were collected and digitized. The digital data thus collected was then archived in the form of an institutional repository.

- **Development of Operational Modules :** This was related to the development of various modules related to the management of research related data and administration.

The platform aimed to benefit all students, faculty, and researchers in a variety of ways because the digital format broadens and deepens access exponentially. The portal provides access to research material and resources, and will be available for use at anytime, anywhere by its students, staff and faculty.

Innovative Features

The project was a unique innovative attempt endeavoured to develop a digital research repository for the academic and research community and provide a single platform for research related information. The innovative features of the project were as follows :

- The designed system is information centric, with enhanced capabilities for information asset management in the web infrastructure, and it follows uses appropriate standards for information for creating and accessing information.

- The application has UTF-8 Support and facilitates granular group based access control, allowing setting permissions down to the level of individual files.

- The institutional repository has facility for self-archiving. This enables the researchers to submit their research papers directly to the repository.

- Provides an innovative mechanism for collection, storage, and preservation of all relevant research materials for faculty, academics, students and researchers.

- Optimize the efforts of researchers in the university to create, manage, discover, access, and disseminate knowledge. The repository will accept all scholarly works from faculty and researchers.

- The platform makes the university research work openly accessible through a single platform.

Achievements

The need for a digital research archive was assessed and the idea was further developed on the basis of proper background research. The proposal was put up to the Hon'ble Vice Chancellor and after his approval the work was undertaken on individual basis to develop and design a platform. A prototype of the platform was designed and developed.

Applications and Uses of Innovation

The platform brings together significant resources for education and research on a single platform for easy access to emerging research activities. It not only facilitates easy availability of research material to the faculty and student research community encouraging interdisciplinary learning and research, but also enables both the student and teacher community to share scholarly information and stimulates collaboration and participation within the student and teacher community. The repository provides a means to bring together the research output on a single platform, thus providing a showcase for research. Storing and making available our research outputs via the Research Repository is crucial for enabling the worldwide scholarly research community to discover and retrieve the University research. The research repository will lead to increased visibility of the research at the university and also increase the impact. The administrators/policy makers of the university and other institutes may also utilize the findings/recommendations for policy making, etc. The students engaged in research in different areas may also use it as a single point reference platform.

Way Forward

At present a prototype of the platform is ready and may be implemented by the university for the benefit of all the stakeholders of the university.

Coordinator and Innovator

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