HITLIB NEWS

Harare Institute of Technology

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Editorial

It is our sincere hope that you continue to be informed, educated and entertained by our newsletter the HITLIB News. The year 2012 arrived too quickly and loaded that it was almost not possible to give you the usual HITLIB News meal you so well deserve after sweating it out the whole of the first quarter of the year. Nevertheless, it is better late than never. Here then is your first meal this year; Volume 2 issue 1, March 2012. Enjoy it.

The Institute has invested a lot in the subscription of online or electronic resources. This is being done with the hope and belief that the resources would be put to maximum use by students and staff. Space available in the current library building for print resources makes investment in e-resources worthwhile. Access to online resources mitigates shortage of space in the library. One such online resource that the Library subscribes in order to complement hard copies of books, is e-brary. The latter has a total collection of more than thirty-three thousand titles of books, five times more than the current collection in stock in our library. The beauty about online or electronic resources is that there are no limitations in access hours as long as one is connected to the net. The e-resources also allow multi-user access. The online service should, thus, be seen as a solution to limitations in access to hard copies by you.. Continued subscriptions to online resources and investment in systems that support online access should be encouraged. This way the Institute will be walking the technology talk along the technology path. It is therefore important that the library also provides clear guidelines/instructions on how to make the most out of electronic resources in order to realise value for money invested in the e-journal subscriptions.

Driving Awareness and Adoption of Open Textbooks in HIT

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Electronic Journals at Harare Institute of Technology (HIT)

Electronic resources (or e-resources) are materials in digital format accessible electronically. Among them are electronic databases in varied digital formats such as (PDF) Portable Document Format and HTML (Hypertext Markup Language, Of the electronic databases, electronic journals and electronic books are fast becoming popular with students and staff at HIT.

What are Electronic Journals?
Electronic journals, also known as *e-journals*, are scholarly journals that can be accessed via electronic transmission. IThey may be understood as a specialized form of electronic documents with the purpose of providing material for academic research and study. They are formatted approximately like journal articles in traditional printed journals.

PERI Program E-Resources

Most commercial journals are subscription-based and universities subscribe to them as consortia so as to provide access to students and faculty. Harare Institute of Technology (HIT) is, indeed, one such university that has invested a lot in electronic journals for access by its students and staff. HIT joined the Zimbabwe University Libraries Consortium and was a beneficiary of electronic journals that were initially made freely accessible to members of the Consortium. HIT made consortia contributions without fail to make these resources easily available and accessible they later became subscription-based. Currently HIT Library provides access to the following databases of e-resources through the ZULC consortium subscription:

EbscoHost: This database allows access to more than 16000

abstracted and indexed journals from science, technology, medicine, social science and humanities

EmeraldInsight has Emerald Management, that contains 140 business and management journals. and Emerald Engineering e-Journal Collection with 19 peer-reviewed and full text engineering journals.

Sage is the world's 5th largest journal publisher with a portfolio that includes more than 645 journals spanning the Humanities, Social Sciences, Sciences, Technology and Medicine.

Taylor and Francis: This is one of the oldest commercial journals publisher in the world, and one of the leading global academic publishers with over 900 peer-reviewed research journals and a backlist in excess of 20,000 specialist. It also publishes about 1,800 new books each year covering subjects such as chemistry, computer science, engineering and technology, food science and technology, mathematics and statistics, and pharmaceutical sciences among others.

Wiley Library Online hosts the world's broadest and deepest multi-disciplinary collection of online resources covering life, health and physical sciences, social science, and the humanities. It delivers seamless and integrated access to over 4 million articles from 1500 journals, almost 10,000 online books, including hundreds of reference works, laboratory protocols and databases.

E-Brary is a leading e-book provider to until 31 December 2012libraries and researchers worldwide. It hosts more than 459 214 documents covering subject areas like business and economics, computer science and IT, life sciences, physical sciences, medicine and technology.

EIFL Program E-Resources

Continued membership subscription to

the Electronic Information For Libraries (EIFL) has allowed HIT free access to a number of electronic journals. Currently free access is available to the following databases of e-journals:

BioOne -provides, until 31 December 2012, access to about 160 high-impact research journals covering biological, ecological and environmental sciences.

Cambridge Journals Online - provides, until 31 December 2012, access to a multi-disciplinary collection of over 230 leading journals covering subjects including science and technology, medicine and the humanities and social sciences.

JSTOR -provides, until 31 December 2013, access to over 1 000 leading academic journals across the humanities, social sciences and sciences.

Oxford English Dictionary Online is accessible until 31 December 2012

Oxford Reference Online is providing, until 31 December 2012, cross searchable access to the full text of over 200 dictionaries and reference books covering a broad range of subject areas, plus more than 12500 images.

Oxford Journals Collection has access to over 220 high quality online journals in medicine, life sciences, mathematics and physical sciences, law, the humanities and social sciences.

Oxford Handbooks Online has access to full text of over 80 titles of books published as part of the prestigious Oxford Handbooks series, plus specially commissioned keywords and abstracts. It covers subjects such as business and management, political science, philosophy and religion.

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Electronic Journals at (HIT cont... from p2

Open Access Resources

An increasing number of journals are now available as online open access journals, requiring no subscription and offering free full-text articles and reviews to all. Individual articles from electronic journals can also be found online for free in working paper archives; on personal homepages; and in the collections held in institutional repositories and subject repositories. Some commercial journals do find ways to offer free materials. They may offer their initial issue or issues free, and then charge thereafter. Some give away their book reviews section for free. Others offer the first few pages of each article for free. All these are a great bonus which Harare Institute of Technology Library has solemnly grabbed and is creating links on the Institute Web site for easy access. Major open access databases provide free full-text access to thousands of electronic articles and reviews include: *Directory of Open Access Journals (DOAJ)* -a service that provides access to quality controlled Open Access Journals covering all open access scientific and scholarly journals that use an appropriate quality control system, with no limitations by language or subject area. DOAJ is aimed at increasing the visibility and ease of use of open access scientific and scholarly journals thereby promoting their increased usage and impact.

Directory of Open Access Repositories (OpenDOAR) - a project aimed at providing a comprehensive and authoritative list of categorised academic open access research repositories for end-users who wish to find particular archives or who wish to break down repositories by locale, content or other measures. In the process of listing and categorising access and use of the repositories are

increased thereby benefiting authors of the research material and also researchers who wish to find that material.

Advantages of E-Resources

Electronic resources, particularly electronic journals and e-books, can be viewed as an integral part of library collections with more advantages than disadvantages. Indeed advantages of relying on electronic resources are undeniable.

Speed of access would mean that researchers and academics alike get information whilst it is still current as the information can be put on the Web as soon as it is publishable and get accessible much faster than can be achieved by print paper. Related to speed is increased access where many if not all our students and lecturers can retrieve and view the same piece of information at the same time than is possible in a print environment. The library will literally be open 24 hours a day, 7 days a week and 365 days a year as students can access the resources from computer laboratories or from the comfort of their rooms and lecturers from their offices or homes where off-campus is set. All what is required is to have the Library Server running all the time. Furthermore, disabled people can access much library information at home, and resources such as e-books are customisable in terms of background colour and font size, can be configured to read out text, and have easy-to-turn pages.

The rapid turnaround time means that articles can be read, commented on by the journal's readers, and amended much more quickly than can be done with print. The ease with which e-mail can be sent, or forms filled in means that there can be much greater **feedback** through

the Web thus providing much interaction. Electronic resources also allow a greater degree of interaction with a library's community through the use of blogs, wikis, RSS feeds, and e-mails. Even if users are coming into the library less frequently, the library can still operate as a portal, offering guidance for web-surfing (perhaps by lists of approved links, or tips on surfing techniques) and providing access to a broad range of electronic resources, perhaps for the first time.

Electronic resources offer flexibility as they are not tied to a format, printer or distribution network thus they can evolve quickly.

Disadvantages of E-Resources

The main disadvantages of digital information are the **limitations of the computer monitor** that leads to problems with reading, particularly over four or five screens, annotation and portability.

In electronic environment citations perish as web sites change their URLs whereas in the paper print, once printed, the details of a paper journal remain constant, thus finding them again is straightforward.

by Edward Mujera

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The Open Access Initiative and OA Resources and Services

Jasper L Maenzanise

Open Access is a relatively new paradigm or initiative which is enhancing scholarly communication in today's knowledge era. The latter is largely characterised by an increased use of information and communication technologies and multimedia technologies to generate and communicate knowledge and information. The Open Access paradigm advocates for the removal of access barriers to the wealth of knowledge and information that enhance research and enrich the learning processes. Through the increasing use of converging technologies such as ICTs, multimedia and social networking platforms, Open Access is being made possible through online connectivity to various web sites and databases of resources. It is thus enabling the global sharing and wide use of knowledge and information among the rich and poor and vice versa thus providing a vehicle for uniting all mankind through the sharing of the global knowledge and information.

The Budapest Open Access (OA) Initiative represents the first formal approach to systematically organise with a clear statement of principle, strategy and commitment the move to introduce a more global open access society in the new millennium. The initiative arose from a meeting that was held in Budapest by the Open Society Institute (OSI) from 1-2 December 2001. The meeting was convened to deliberate on how to quickly make peer-reviewed journal literature freely accessible and without any restrictions on the Internet to scientists, scholars, teachers, tutors, students and to researcher. In its deliberations, the meeting represented many view-points from a wide selection of academic disciplines in various countries as well as contributions from organisations and institutions that make up the open access movement. The meeting also deliberated on how OSI and other foundations could use their resources to facilitate the paradigm shift in accessing knowledge and information through the open access mode and make OA publishing an economically self-sustaining activity. This led to the formation of the Budapest Open Access Initiative that was signed by the Budapest participants as well as a growing number of individuals and organisations from all over the world representing researchers, societies and other OA initiatives.

Advantages of OA

OA is largely economical in that it removes any price barriers and advocates the free access and use of knowledge and information generated elsewhere by other researchers; It empowers readers to find and make use of relevant literature from wherever they are located; and OA gives authors and their works vast and measurable new visibility, readership and impact. There is therefore every need for individuals and institutions to open up access to their literature and remove any possible restrictions such as the cost factor and most of the restrictive copyright laws and licensing agreements. In 2006, the Zimbabwe University Libraries Consortium (ZULC) organised and held an international conference on Open Access to share with other professionals the knowledge of OA initiatives and to chart the way forward for institutions, organisations and individuals in Zimbabwe to join in this open access movement so that the Zimbabwean scientists, scholars and researchers could also move to provide free access to the research knowledge and information that is generated in Zimbabwe. Currently the ZULC is organising another international conference to be held in October 2012 during the Open Access Week.

ArXiv, is an open archive of more than 739 631 e-prints in physics, mathematics, computer science, quantitative Biology, quantitative Finance and Statistics. It was originally run from Alamos National Laboratory and now it is being partially funded by the National Science Foundation and run from Cornell University, a private not-for-profit educational institution.

BioMed Central is an online open access publisher of peer-reviewed research across all areas of biology and medicine. It publishes 150 peer-reviewed open access journals accessible at http://www.biomedicalcentral.com Biochemistry, Pharmacy, Chemistry and other health and life-sciences related literature can be accessed on this platform.

DOAJ (Directory of Open Access Journals) is an OA service covering free full-text and quality-controlled scientific and scholarly journals. It currently holds 2 310 journals with 666 giving full-text articles. Currently a total of 104 183 articles are included in the DOAJ service. The website of the service is http://www.doaj.org/

There are also distributed institutional archives or repositories as listed in the Directory of Open Access Repositories (OpenDOAR) that the HIT Library is providing access. The OpenDOAR lists more than 2000 institutional repositories;
Other Open Access journals can be accessed freely on the Internet through the Indian Academy of Sciences, Indian National Science Academy and SciELO;

The **Directory of Open Access Books** (DOAB) is a very recent open access service that is being put in place to provide free access to monographs or books. DOAB aims to, "...increase discoverability of open access books." Once fully functional, the database will provide searchable index to peer-reviewed books that are edited and published under the open access business model. Links will also be provided to full-text publications that are available at a publisher's website or repository. The HIT Library is working towards integrating the directory into our online catalogue that runs in Mandarin M3 library automation system. This will help academics, non-teaching staff and students to discover the new books that will be available through open access. As with open access journals, the open access books will be peer-reviewed monographs thus allowing authentic, authoritative and relevant publications to be accessed freely on the Internet. The HIT Library is therefore encouraging all its stakeholders to mandate the Open Access mode of scholarly communication and to contribute and/or make effective use of the available Open Access resources.

Driving Awareness and Adoption of Open Textbooks

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Celebrating Open Access Week at HIT

The Open Access week is a global event, now in its fifth year, that is organised to promote, advocate and market open access as a new paradigm that is promoting and enhancing scholarship and research. Research and academic institutions engage in various promotional activities during this week to heighten awareness of Open Access and advocate for researchers, scientists and scholars in various institutions worldwide to benefit from as well as contribute to the growing wealth of open access knowledge and information.

The Harare Institute of Technology Library celebrated the Open Access week from 24-29 October 2011 by holding open access lectures and discussions with students and lecturers at HIT as well as the production and distribution of OA marketing brochures and posters.

OA Resources and Services

HIT provides open access to e- resources such as electronic journals, databases and institutional repositories.
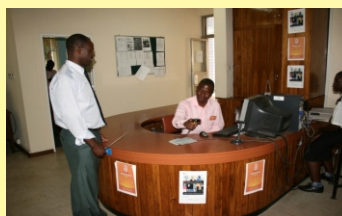
An Institutional Repository (IR) is an online archive/database for collecting, preserving for posterity, and disseminating in digital form the intellectual or knowledge output of an institution, such as HIT. Materials for IRs includes journal articles that are pre-prints (peer-reviewed but not yet published) and post-prints (peer-reviewed and published) as well as digital formats of theses and dissertations, communiqués and short technical papers. The IR can also include digital assets that are generated during an institution's normal academic activities such as course outlines, course/lecture notes and other digital learning materials. The objectives for having an institutional repository at HIT are:

·To gather, process and create an archive or institutional memory of scientific and technological research and innovation at HIT;
·To provide open access to the archived institutional research output;
·to provide global visibility for an institution's scholarly, scientific and technological research and innovation;
·To collect and maintain content in a single location;
·To store and preserve other institutional digital assets, including unpublished or otherwise easily lost grey literature such as theses, reviews, communiqué and technical reports).

It is to this end that the HIT Library is currently seized with establishing an Institutional Repository for the HIT. The following are some examples of OA resources and services that offer support to and stimulate scholarship in innovation at HIT. A detailed list is available in the HIT Library and on the Library web page.

Meet the team that introduced Open Access Week for the first time at Harare Institute of Technology. Front row from left: *Mrs P Mupamhanga (Sub-Librarian), Mrs M Bortman-Dhlamini and Miss R Tandi. Standing from left: Mr J L Maenzanise (Librarian), Mr J Mbirizah (Bibliographic Services Librarian), Mr C Ruzande (Reader Services Librarian), Mr E Mujera (Deputy Librarian) and Mr M Nhakura*

Even members of staff of LIS took the opportunity to appraise each other on the Open Access Week and activities in which they would be involved.

Part of the magnificent HIT Library with a display of open access material that were used to raise awareness of Open Access. The material included book markers and key holders among others.

The deputy librarian checking to ensure that all was set for the Open Access Week at HIT with the theme, "Raising awareness of e-resources available and accessible through the HIT Library"

It was an opportune time for members of staff to explain and assist students in accessing e-resources particularly those available through open access. Above a member of staff stresses a point to a very attentive student. One on one talks were held with students in the computer laboratories. The Librarian himself took some time from his busy scheduled and addressed a big class in the automotive engineering workshop.

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Book review: Application Software Reengineering/ A. Alam and T. Padenga

The book Application Software Reengineering written by Afshar Alam and Tendai Padenga is about reorganizing and modifying existing software systems to make them more maintainable and user friendly. It also powerfully dwells on the aspects of general Application Software Reengineering across various fields.

The authors have achieved a logical progression of the subject they discuss by approaching Software reengineering from the software evolution, the process of the evolution, the patterns of software evolution in open source software process showing how application software is turning into legal systems as the field of software reengineering rapidly takes shape right through to code slicing and code refactoring as shown in the Contents Table below:

Contents Table
Chapters
1. Software Evolution
2. Software Evolution Process
3. Patterns on open software Evolution
4. Taxanomy of software Evolution
5. Software evolution in SW Design
6. Software Maintenance Process
7. Program Comprehension
8. Legacy Systems
9. Reverse Engineering
10. Forward Engineering
11. Software Reengineering
12. Code Slicing

Thus key coverage includes
• Software evolution along with the evolutionary patterns in open source software,
• Program comprehension and its relationship with software maintenance,
• Identifying and distinguishing patterns associated with reverse ad forward engineering
• Latest developments in Application software Reengineering and
• Code slicing and refactoring techniques along with their implications.

Some of the features of the text include two case studies in Code slicing and Code

Refactoring.
It should also be noted that each chapter has its own objectives, keywords, and ample problem questions which is an excellent approach to effectively explain the concepts.

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This is what the Vice Chancellor Harare Institute of Technology, Eng. Q. C Kanhukamwe had to say about the book in his **Foreword,** *"This book is bound to give very clear-cut, explicit and definite answers to application software reengineering. It is an excellent piece of academic literature intended to help not only honours undergraduate and postgraduate students, but research scholars as well as practitioners in the software industry. It is user friendly and can be used in a non-sequential manner. Provision of simple, comprehensive and understandable illustrations and exercises makes this book an excellent primer to the dynamic held of application software reengineering.*
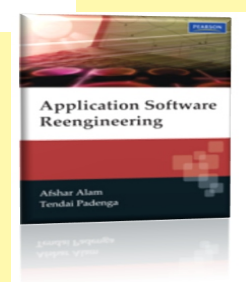*Indeed this book is a culmination of years of experience in teaching and research by the authors who have had a long felt desire to have a simple book that not only addresses and identifies the competence requirements of the next generation of software developers, but also offers a refreshing analysis to application software reengineering trends. It offers a realistic approach to and sufficiently equips its users for the new software environment.*

The authors must be commended for coming up with a self-paced guide that helps users answer most questions students, researchers and software engineering practitioners may have. I feel that this book does offer a mental image of application software reengineering core principles.

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About Dr Tendai Padenga
Emerging from HIT Community of researchers is one of the prolific authors of a book, Application Software Reengineering, a must read for all senior undergraduate and first-year undergraduate students in any computer science education curriculum is Dr Tendai Padenga.

Dr Padenga is a Zimbabwean national who holds a PhD in Computer Science. He is a commonwealth fellowship alumni as well as an Indian Council for Cultural Relations scholarship (Government of India) alumni. Earlier, Dr Padenga was awarded a prestigious National Foods Ltd scholarship (Zimbabwe) after attaining out-standing grades at Ordinary level. An active participant in several turnkey IT projects, he was the Group Projects Officer for the Business Process Reengineering exercise of African Banking Corporation Holdings, Zimbabwe, in partnership with the then Indian banking solutions provider I-Flex Solutions. He did his research fellowship at Osmangazi University in the Graduate of Electrical, Electronic and Computer Engineering in Turkey. Currently Dr Padenga is the Dean of Information Science and Technology at Harare Institute of Technology, Zimbabwe.

Application Software Reengineering

Afshar Alam
Tendai Padenga