Connecting People and Information: How an African Special Library is Building Bridges

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Abstract

"Connecting People and Information" takes on a whole new meaning when there is a 6 000-10 000 km distance between the publishers of information and the users and where an even greater chasm exists between the currencies and economies of "distant" lands and those of Europe and North America. Although physical distance has become largely insignificant with the advent of online information resources, the cost gap still looms very large. This is indeed a sizable "bridge" to build.

The CSIR (Council for Scientific and Industrial Research), one of Africa's leading scientific research organisations, experienced a gradual but significant decline in its collections over the last twenty years mainly due to spiralling costs. A major organisational reconfiguration exercise provided the perfect opportunity for the CSIR Information Services to turn this trend around and reconnect the CSIR researchers to global S&T information.

The turnaround process is described and we report on how we are currently measuring the value added and impact this has had on the organisation. We also describe new projects such as the bridge we are busy building to connect the world to our own research output and an exciting initiative to connect scientists with scientists.

Introduction

The CSIR (Council for Scientific and Industrial Research) is one of Africa's leading scientific research organisations, covering diverse subject areas such as biosciences, materials, mining, the environment, defence, the built environment and ICT. It was

established by Act of Parliament in 1945 and has its headquarters in Pretoria, South Africa with several regional offices spread across the country.

In 2005, as the organisation approached its 60th anniversary, a major repositioning exercise took place to ensure that the CSIR remained true to its mandate to "improve the quality of life of South Africa's people through directed, multi-disciplinary research and technological innovation, developing scientific, engineering and technological (SET) knowledge, people and infrastructure." This reconfiguration plan was developed and implemented during 2006 and 2007 as the "Beyond 60" initiative. It resulted in the CSIR being optimally positioned to fulfil its mandate and to deliver products and services based on scientific and research excellence.

CSIR INFORMATION SERVICES:

The CSIR Information Services serve the information needs of approximately 700 researchers. It has a central facility on the main campus of the CSIR in Pretoria as well as four small information centres in the Stellenbosch (Western Cape), Durban, Johannesburg and Port Elizabeth regional offices. Eighteen professional staff (three with PhDs) and six support staff ensure that quality services are rendered. These include literature searches, access to CSIR collections (both paper-based and electronic resources), document delivery, information literacy training and knowledge management.

Although the CSIR library was at one time regarded as the top science & technology library in the country, the upward spiralling costs of information resources over the last twenty years contributed to a gradual but significant decline in its collections. The high cost of serials resulted in journal subscriptions dwindling from over 6000 in the early eighties to about 800 in 2005.

Between the late 1980s and 2005 the CSIR Information Services was in a unique position of not having a book or journal budget except for limited LIS-related publications. All books and journal subscriptions were paid by the operating units (research departments) themselves. This has been a determining factor in the decline of the collections. Many operating units found it difficult to adjust to the escalating costs of information resources and cancelled non-essential titles every year, continuing to subscribe to core publications only. The CSIR became more and more reliant on ILL and document delivery services to meet the needs of our researchers. Even where we still subscribed to paper copies of journals, timely access was a real problem. Being geographically far removed from the major S&T publishing houses of Europe and North America meant that paper journals were often delivered long after their publication date, issues often went missing and circulation could take months. Because of the costs involved broad based subscription to electronic journal platforms was not feasible.

Researchers were thus systematically being cut off from quick and easy access to information resources that are essential for high quality research and innovation. Clearly a major turnaround was needed and the Beyond 60 initiative provided a perfect opportunity to draw attention to the poor state of the CSIR collections. Researchers had to be reconnected to vital information resources to ensure they could meet the demands of the CSIR mandate. We also knew that this reconnection had to be electronic and had to be comprehensive.

Building our First "Bridge"

Our online journey had started in the early 2000's when one of the operating units cancelled all their subscriptions and subscribed to a commercial table of contents service. The idea was to regularly scan tables of contents and use the journal subscription funds to request only relevant articles via ILL and document delivery services. In theory this should have worked, but problems soon emerged. Electronic TOCs often arrived 6-8 weeks before paper articles were available in the country. It became a logistical nightmare to constantly resend ILL requests only to be told articles are not available yet. In addition, requesting more than one article from one issue caused copyright problems. It did, however, serve as the first, very tenuous "cable" of the bridge that would connect researchers with information and it is still used for alerts.

In 2003 we started subscribing to our first few e-journal platforms through the South African library consortium, COSALC's, SA Site Licensing Initiative (SASLI). These included ScienceDirect, EbscoHost and the American Chemical Society journal platforms. They were basically "Big Deal" subscriptions at very reasonable prices based on our then existing subscriptions. This was perhaps the only time that the substantial dwindle in our collection was fortunate! The EbscoHost package was made available to developing countries at significantly discounted prices through eIFL.

Once they gained initial exposure and we showed them the 'guiderails' our researchers embraced the digital age with enthusiasm. Instant access to at least some scholarly journals led to soaring downloads from these platforms. Yet many sorely needed journals were still not available at the desktop or very slow in coming as paper copies.

The bridge was however, starting to look considerably less shaky!

"Beyond 60" Initiative

When the "Beyond 60" initiative was launched, CSIR Information Services immediately saw the pivotal role it had to play in realising the organisational goal of ongoing innovation in research that is able to compete with global best practice by ensuring that our researchers are connected to the best information resources. The first two steps were to establish what the real needs were and then to convince the CSIR Executive to fund the necessary resources. We believed the old model of the operating units paying for their own subject related literature would not work in the new electronic environment with its many aggregated resources.

We embarked on a major information mapping exercise to determine what information resources were already in use in the organisation, where the gaps were and how these needs could be met. Approximately 300, mostly senior and experienced researchers were interviewed by information specialists working within the operating units. The methodology included a comprehensive questionnaire complimented by focus group discussions. The questionnaire also included a list of relevant e-journal platforms and

abstracting and indexing databases available through our national consortium mechanism SASLI.

It was no surprise that one of the issues that emerged from the audit analysis was a serious concern about the lack of adequate information resources to support high level research. Local universities provide very comprehensive access to online information resources and our researchers were expecting similar services at least.

At the time of the audit a report entitled: *"User needs for information access, data analysis, knowledge management and reporting"* was compiled by one of the CSIR Fellows (top scientists in the organisation with considerable influence). This document gave a specific requirement for access to scientific and technical literature and would become our guiding principle: *"… researchers need access to 90% of their information requirements within minutes, 95% within days, and 100% within 2 weeks. The most appropriate mechanisms to satisfy these needs vary according to information type"*.

The next step was to convince the CSIR Executive that the Beyond 60 goals could not be realised without fast and easy access to peer reviewed global S&T literature. A CSIR Information Services Task Team that included some of the CSIR Fellows was appointed by the CSIR CEO. It produced a report, *"Meeting the needs of the future CSIR as leading multidisciplinary research and technology innovation organisation"* which was submitted to the CSIR Executive early in 2006. The report did not only point out the urgent need for more electronic information resources but also outlined the requirements to enable the "Virtual Research Environment" (VRE) or eResearch – an environment in which our researchers would have to become comfortable if the CSIR were to enter the global research arena. (VREs encompass the entire eResearch process, from access to electronic content and research tools to data curation and online research collaboration).

After many months of lobbying, the report's recommendations, including a tentative list of resources, were accepted, and the "bag of gold" was handed over. This enabled us to triple our expenditure on electronic resources. We were finally ready to go! Although we were already in the second part of the year it was decided to start the implementation process immediately.

At the time of the restructuring of the organisation and in anticipation of the drive towards electronic resources, a new position, that of a strategic information resources specialist, was created within the CSIR Information Services. Tasked with implementing and managing the electronic resources programme, she had to ensure that the available funds were applied optimally and that researchers and information specialists were both consulted and kept informed on all issues relating to electronic resources.

E-RESOURCE SELECTION: COMMERCIAL RESOURCES

The original list of SASLI negotiated resources used during the survey, provided the starting point for selection. These were the easy choices as affordable prices had already been negotiated by SASLI. Most publishers were very understanding and offered access at pro-rata fees for the remainder of the year. Within a few weeks of the funds being approved we had access to several electronic journal platforms and abstracting and indexing databases.

In selecting resources we also had to ensure that all operating units were catered for, and the emerging research areas (ERAs), e.g. nanotechnology and photonics, in particular, had to be well supplied with resources. One selection method employed was to use ISI's Essential Science Indicators to determine the top journals in these areas. We then checked how many of them were available on the platforms we already had or intended buying. We also benchmarked ourselves against the library websites of the top institutions in these disciplines.

Specific requests from individual users were used to compile a "wish list" which gave us a clearer indication of what was needed in addition to the large aggregated platforms. Some of these resources were not on the SASLI list as there were no consortium deals available for these products. They tended to be more specialized databases which had to be negotiated directly with publishers who, for the most part, were remarkably accommodating and understanding of our situation and assisted us to make access a reality. We sometimes had to do some hard bargaining to get values other than FTEs to be the basis on which the fees were determined. Some suppliers were less willing to negotiate and had set prices regardless of the institution's circumstances forcing us to look at alternatives where available.

By the beginning of 2007 we had provided access to eleven new databases in addition to the three subscribed to in 2003. At the same time we also turned our attention to non-commercial, open access sources of information.

OPEN ACCESS RESOURCES

The global trend towards open access opened up many good resources covering the CSIR research areas. A number of OA resources such as ArXiv, Highwire (open access titles), DOAJ, OAISTER Hindawi, IDRC and WorldWideScience.org were evaluated and added as reputable resources. This is an ongoing process and new databases are added as we become aware of them. Institutional repositories also represented an important category of information for CSIR Information Services. Through *Open*DOAR our researchers have been given access to a vast number of repositories from all over the world. Our own repository, CSIR Research Space, is now also included in this, but more about that later.

Unfortunately South Africa does not qualify for free access to most of the INASP PERI projects or the FAO's AGORA, the WHO's HINARI or UNEP's OARE projects. As a developing country we did however, get free access to Mary Ann Liebert, JSTOR and - Aluka and received discounts on several other products.

With so many resources to choose from and with even more items represented within each of these resources it soon became necessary to build the next bridge – that between the user and the most suitable resources.

FEDERATED SEARCH AND LINK RESOLVERS

Offering a good selection of e-journal platforms and other databases to our users was just the start. Sudden access to thousands of electronic journal titles resulted in many requests

for an A-Z-type title list to enable quick and easy access to specific titles. We had anticipated this need and part of the original funding was used to purchase the Ebsco A-to-Z title list, also available through a consortium deal.

Federated search was the next requirement but funds were starting to run low. At about the time we started investigating federated search engines, ScholarSFX a free link resolver service negotiated by eIFL, (an initiative to promote affordable access to electronic information resources for libraries in developing and transitional countries) became available. ScholarSFX allows libraries to create customized links based on their institution's electronic journal holdings and display these links in Google Scholar search results. Although it is not ideal, it works well with today's "Google culture" and provides an easy and free way to search many resources simultaneously. (We will soon embark on a study to determine how well it really searches our holdings. For high level literature searches individual databases with good search functionality is still the option we recommend to our research staff.)

We are currently investigating open source federated search engine, link resolver and ERMS software solutions to further enhance access to global resources for our research staff.

CUTTING THE RIBBON CROSS THE BRIDGE!

Having spent considerable funds on access to a wide selection of electronic resources, it was imperative that our researchers were alerted to this new "information highway". We therefore devised a promotional strategy that guided our marketing effort over a protracted period of time as and when the new databases were implemented and made available.

Every new product was announced on the organisational intranet as well as on the CSIR Information Services "What's New" blog. People who asked for specific resources were personally contacted and informed of the availability of the resource. Our information specialists launched an extensive awareness campaign in all the operating units, highlighting resources that were of particular importance to each unit. It was very rewarding to receive many expressions of appreciation from delighted end-users. A special presentation to CSIR executive and other high level staff also received a very positive response.

Once access via the CSIR Information Services web page became a reality, changes had to be made to accommodate the growing list of resources and to make navigation easier. The simple home page we previously used had become rather crowded requiring a second level of navigation. Electronic resources are now listed under three headings: 'Electronic Journals', 'Abstracting & Indexing Databases' and 'Other e-resources'. Each database/platform has a description page which gives details of coverage, a link to the title list as well as a link to the license agreement and conditions of use.

In addition to the new resources we also added a section on specialised science and technology search engines (such as Google Scholar, Scirus, Toxseek and OAIster), updated the links to other, largely open access, electronic resources and placed our blogs in a more prominent position. As was mentioned previously, one of these is specifically used for the announcement of new resources. This section will, in turn, soon be utilised as a bridge for CSIR stakeholders. Some of our stakeholders had asked to gain access to our resources –

which we obviously could not do. As a compromise we have agreed to make available free and open resources that we have given our researchers access to.

MEASURING VALUE

Having embarked on one of the biggest collection building exercises in the history of the CSIR library, we needed to show, in a practical way, the return on the considerable investment that our funding authorities had made. As mentioned previously the following benchmark was set by our primary stakeholders: *"… researchers need access to 90% of their information requirements within minutes, 95% within days, and 100% within 2 weeks. The most appropriate mechanisms to satisfy these needs vary according to information type"*.

The challenge was how to determine whether we measured up to this standard. Did the implementation of electronic resources make a substantial difference to the research process of the CSIR knowledge workers and the speed with which they are able to access literature?

Gathering statistics from all the full text e-journal platforms on a monthly basis was the obvious starting point. During the period 2003 to 2007 the full text downloads increased from 35 173 in 2003 (when we implement the first platforms) to 132 431 in 2007, excluding downloads from most of the open access resources. (See figure 1 below.)
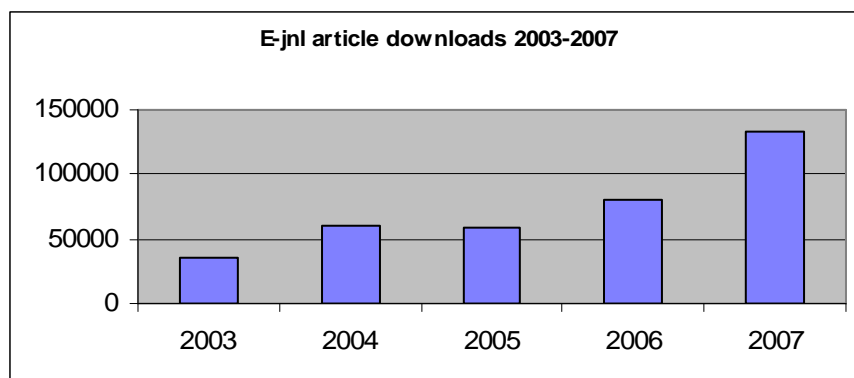
Figure 1: Full text downloads 2003-2007

Inter-library loans (ILL), document delivery and book order statistics were readily available from our in-house online ordering facility (which was introduced during 2003) as well as from the national ILL system. Unfortunately complete document delivery statistics before the introduction of electronic journal platforms were not available.

We started comparing figures for full text downloads (instant access) with the traditional document delivery statistics and expressed it as a percentage of the total requests. We included book loans and book orders as these types of information sources were part of the benchmark. See Figure 2.
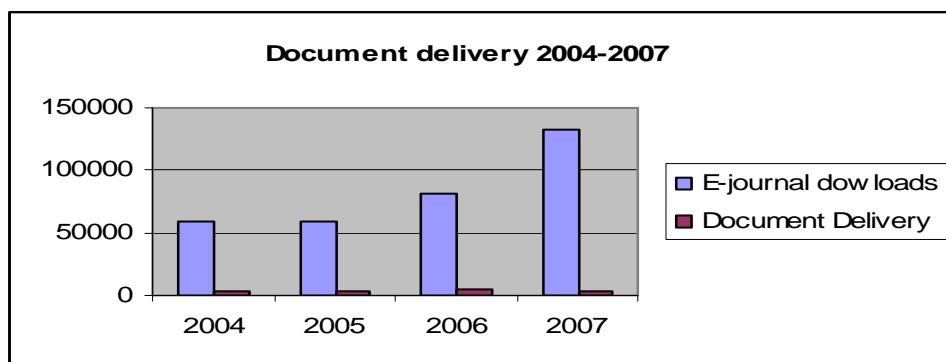
Figure 2: Document Delivery 2004-2007

The results were interesting. We found that from the first introduction of electronic access in 2003 until the end of 2007 between 93% and 97% of literature needs were available immediately at the desktop, well above the standard set. (Table 1). It can be assumed that as most of the requests before 2003 would have been through the traditional delivery channels that the graph could be inverted.

Table 1: Access toS&T information

Year	E-journal Downloads	Traditional Document Delivery Requests	Immediate Access Percentage
2004	59835	3901	93.5%
2005	59056	3896	93.4%
2006	80748	4096	95%
2007	132431	3489	97.4%

Turnaround times of certain paper articles, book loans and book purchases still need to be improved to meet the researchers' standard that all literature needs should be met within 2 weeks.

However, we do realize that this method is flawed as we do not have any statistics of needs that were not met either by the electronic platforms or the document delivery services. Free articles which researchers download directly from the internet are also not included and a researcher may simply decide to get a copy of an article from an alternate source such as a colleague or the author. It could also be decided to drop the reference altogether. Even so, access to S&T literature has vastly improved the CSIR researcher's ability to keep up to date with current developments and build on the work done by fellow scientists across the globe.

The decline in traditional document delivery between 2006 and 2007 was about 14%, not as much as we had anticipated. This may be attributed to the fact that these numbers include book loans and book acquisitions which have so far not been influenced by electronic access (these requests have actually increased marginally). Most of this decline can therefore be attributed to fewer ILL requests. In fact, for the period 2002-2007 a 28% decline in ILL article copy request was recorded.

An interesting additional value measurement tool was an impact study done during 2007. Although the emphasis of the study was on evaluating the impact of information

services as whole, the results did indicate that "time, quality and reliability of information" were areas that researchers felt the CSIR Information Services made a real impact on the research process. The time saved in searching and delivery of information was chosen as a very high impact factor by 80% of those surveyed. (Botha, 2007: 69 & 73). One interviewee compared the scope of resources now available to CSIR researchers very favourably to two academic institutions in Europe and the UK where he had been studying previously.

Finally, many personal communications and other feedback from our users confirmed to us that connecting scientists to global information was well worth the hard work and that it is making a tangible difference in the quality and quantity of the scientific outputs of the CSIR.

Connecting the World to the CSIR

Having dealt with the bridges internally we, towards the end of 2006, started to also build bridges from the CSIR to national and global science communities. The first of these efforts relates to our institutional repository, the second to a physical knowledge commons which is currently under construction.

CSIR INSTITUTIONAL REPOSITORY

The creation of the CSIR institutional repository was a direct response to global trends towards open access publishing. An open access institutional repository showcases the organisation's scientific research work online allowing for full text downloads of its publications. We believe research outputs, published in, or made accessible through a repository, plays a significant role to increase the profile of authors and the institution, disseminate knowledge and increase the impact of research globally. In addition it also provides for many new opportunities for library and information staff as was described by Smith and Pienaar (2007).

In August 2007, CSIR launched its open access institutional repository known as *CSIR Research Space* (CSIR, 2007). It was established with assistance from the University of Pretoria (Van Deventer and Pienaar. 2007) and was only the tenth in the country and the first non-academic institutional repository. The repository runs on DSpace software (DSpace, 2008) allowing metadata to be captured, stored, preserved and harvested. We made a concerted effort to make the existence of the repository known by registering it with all the major repository harvesters.

CSIR Research Space aims to ensure that CSIRs researchers are presented with a variety of opportunities to enhance their visibility, showcase their outputs and capture material that would otherwise have been lost. A series of awareness creation lectures were conducted within the various operating units (also at the remote sites) and research staff appear to appreciate the opportunity to gain additional exposure for their work.

The repository contains previously published articles, publicly funded research reports, data sets, multimedia files and papers written by CSIR researchers. Items in the

repository are all available in full text digital format and items are made available as 'free to use provided the source is referenced'. The aim of CSIR Research Space is to collect CSIR published materials in one central repository and to promote CSIR researchers globally. The repository's URL is http://researchspace.csir.co.za/dspace/ but it is also accessible directly from the CSIR's internet site: http://www.csir.co.za

Articles to be published in *CSIR Research Space* are copyright cleared before being added to the database. This is done via SHERPA (Securing a Hybrid Environment for Research Preservation and Access) or directly from the publisher. For research reports the CSIR Intellectual Property manager or author must give clearance. Should any copyright violations arise with an item published in *CSIR Research Space*; the item will immediately be withdrawn from the system.

The CSIR's institutional repository selection and submission processes differ from that of the standard academic institution. We (CSIR Information Services) maintain the CSIR's technical outputs database – known as TOdB, which gives full account of all CSIR's publications whether these publications are confidential, done under contract or published in peer reviewed literature. This made the process to develop an institutional repository a relatively easy one. It was integrated as part of the entire workflow process linked to the TOdB. The workflow process was designed in a transparent manner and is available to all staff via the CSIR's intranet. The researcher decides up front which items should be made available via *CSIR Research Space* and the repository manager then takes care of the necessary steps to complete the process. Records are currently transferred manually from TOdB to *CSIR Research Space* but we are hoping that the technical problems will soon be resolved and that it would be possible to upload records from TOdB. Figure 3 illustrates the *CSIR Research Space* workflow process.

CSIR RESEARCH SPACE INSTITUTIONAL REPOSITORY CONTENTS MANAGEMENT PROCESS
SS-PROC-CSIRIS-024 REV 00

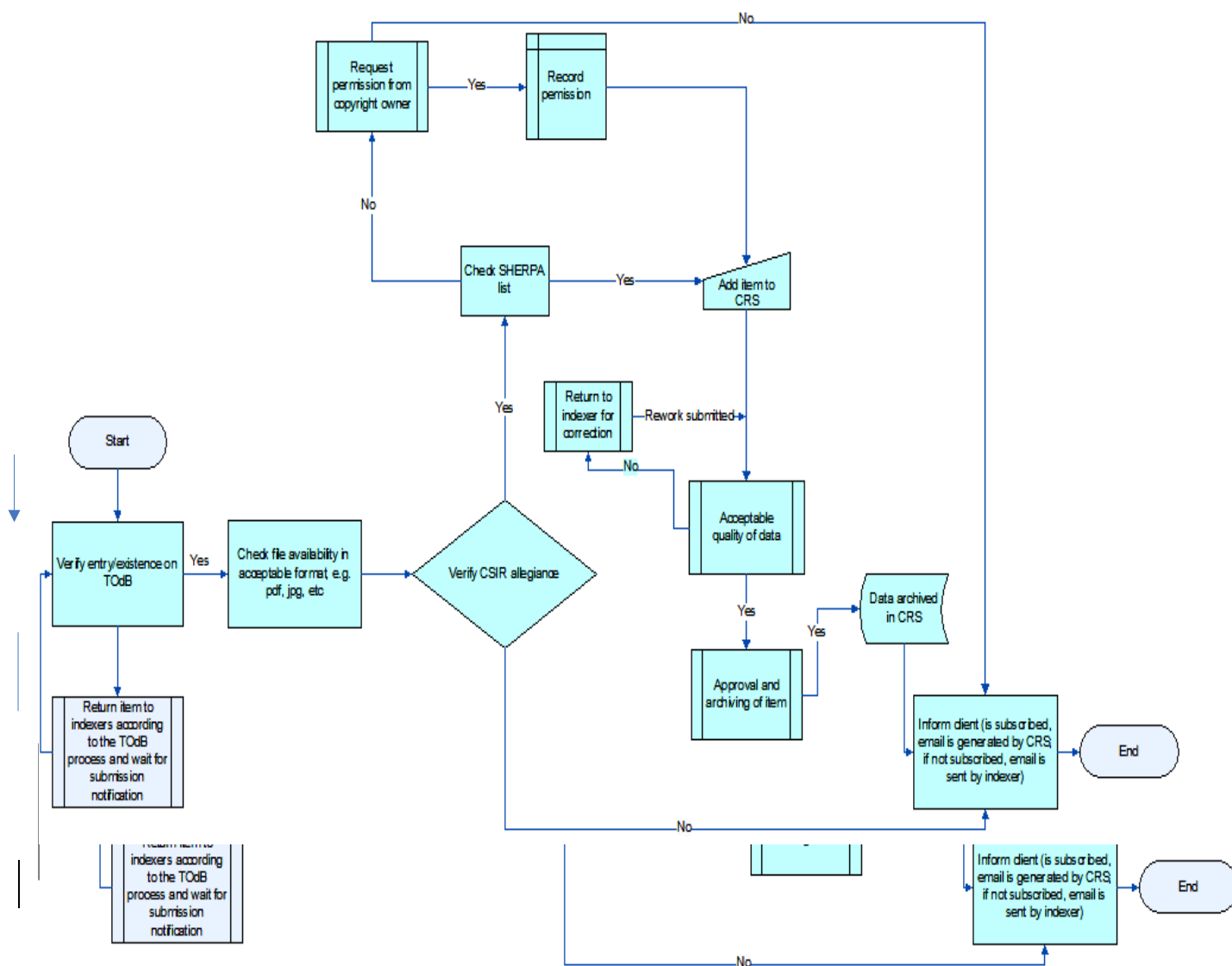**APPROVED BY:**   **DATE:**

Figure 3: Research Space Workflow Process

Some statistics: At the end April 2008, the repository had 1497 records with new items being added continuously. Visits to the site and total full text downloads now average more than 12 000 and 1 300 respectively every month. (See figure 4). There has been a continuous increase in the number of downloads ever since the repository was launched.
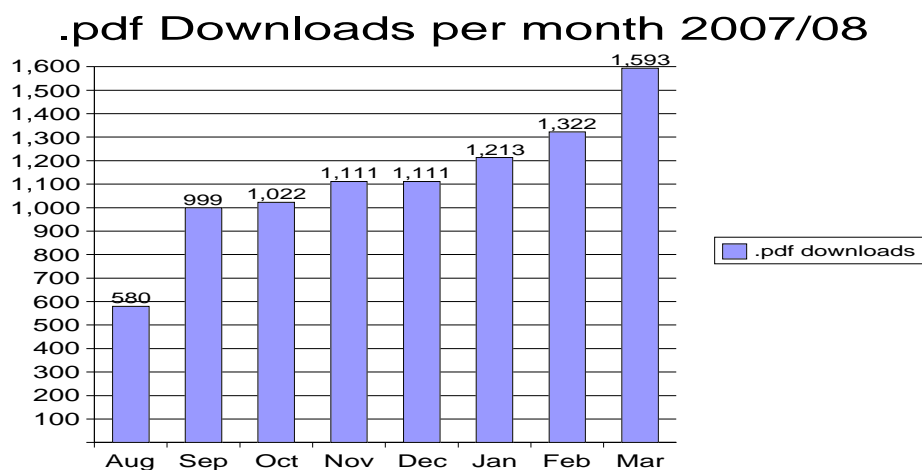
.pdf Downloads per month 2007/08

Month	.pdf downloads
Aug	580
Sep	999
Oct	1,022
Nov	1,111
Dec	1,111
Jan	1,213
Feb	1,322
Mar	1,593

Figure 4: **Usage since August 2007.**

Figure 5 indicates that in total 76 723 new visitors were attracted to the CSIR site during the period August 2007 and March 2008. In addition, 35 929 repeat visits were recorded. CSIR's own use of the site is fairly insignificant and it may therefore be safely concluded that the majority of downloads are done by external visitors.
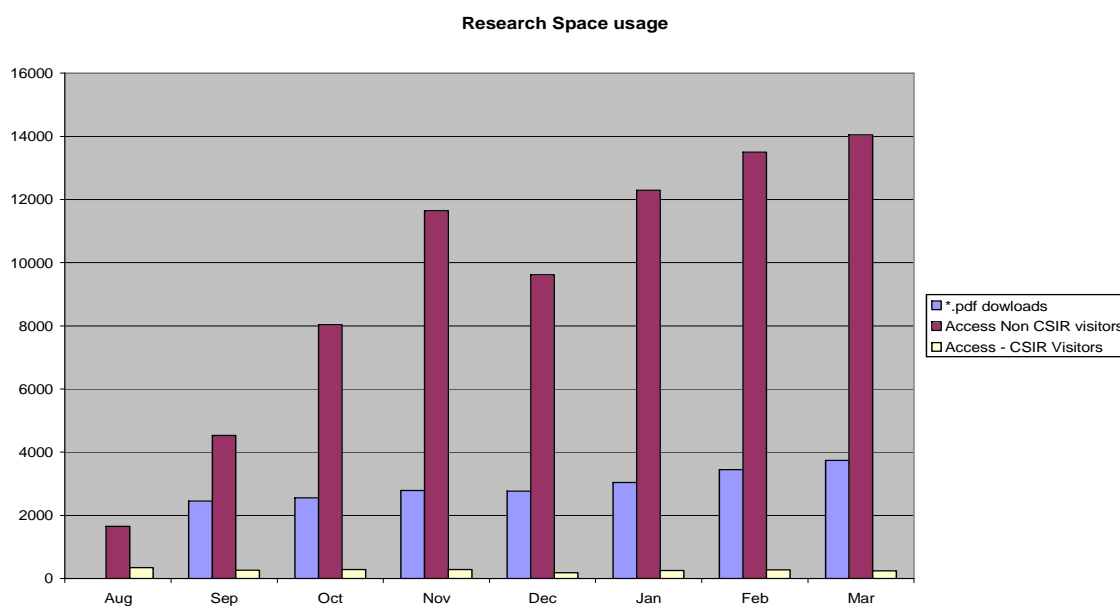
Research Space usage

Legend: *.pdf dowloads, Access Non CSIR visitors, Access - CSIR Visitors

Figure 5: External activity on the site compared to CSIR's own usage (including the articles download activity)

Actual usage of information from the site is steadily increasing. In total 10 276 articles (in .pdf format) were downloaded from *CSIR Research Space* in the six month period between August 2007 and March 2008.It is very encouraging to see that the number of sites that have confidence in the quality of our content and are willing to direct their users to *CSIR Research Space* is steadily increasing (currently 200 sites refer to the repository). The robots,

spiders and search engines that are visiting and indexing our content show a similar trend (see figure 6 below).
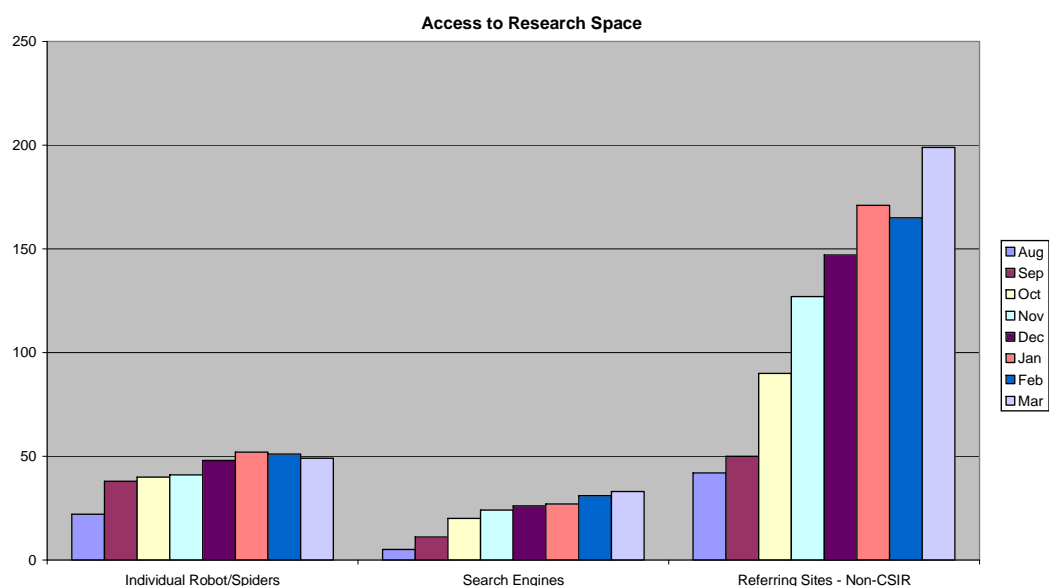

Figure 6: Technology creating bridges to the global community

We believe the way that the institutional repository was designed (as an integral part of the CSIR's internet site) is rather unique. Besides building a bridge to the external community it has also created an internal bridge to our Communications department, responsible for promoting the work of our research staff. Communications staff members now subscribe to specific *Research Space* communities and as soon as an item is added they are notified. Promotional material is created and added to our internet site. Subscribed readers are notified of new additions and are able to link to and download the full text item directly. Download statistics are recoded per item by the repository statistics software and we therefore have a very good indication as to how many times any specific item was downloaded.

Connecting Scientists with Scientists

Another very important aspect of connecting our researchers with information is facilitating the process of knowledge exchange, scientific interaction and networking within the organisation. The CSIR consists of operating units, national research centres and service groups scattered across a large campus in Pretoria and various parts of the country. It became apparent that there was not sufficient interaction between researchers from the various disciplines. An urgent need, to establish an area where researchers could interact less formally was acknowledged. The main purpose of such a space would be to facilitate knowledge exchange, scientific interaction and networking within the CSIR but not necessarily exclusively amongst CSIR staff only.

Currently we are in the process of establishing a Knowledge Commons. It should not be confused with the knowledge commons typically found at academic institutions. Whereas an academic knowledge commons gives students (and sometimes lecturers) the opportunity

to gain access to high end computing equipment and to some meeting rooms, the CSIR's Knowledge Commons was designed based on Doyle and Nathan's (2002) simplified study of knowledge spaces. They subdivided knowledge spaces into individual or personal space, team space and social space.

With its architecturally designed facilities, the CSIR's Knowledge Commons will be the knowledge space for the organisation and its stake holders. The careful planning of the facilities, services and seating will force groups to network thus breaking down communication barriers, encouraging knowledge sharing practices and enabling cross discipline knowledge transfer through formal and informal interaction, meetings and training. Space utilization was planned as follows:

- Individual or Personal Space:
  This is where researchers would be able to personally reflect on what they have been working on and think about future projects without the interruptions of daily office or laboratory activity. Should researchers need a different environment to stimulate creative thinking such an environment will be made available. It is believed that the Knowledge Commons should be able to accommodate these requirements as knowledge workers are becoming more mobile due to modern technology and more flexible work styles.

  Researchers who need to do work that requires intense concentration, will have access to lockable carrels, furnished with a desk, comfortable chair, and a local area network (LAN) point.

  Work areas will also be available to researchers and visitors who prefer to make use of their personal laptops.

- Team Space
  During certain phases of collaborative teamwork, such as the starting or creation stage, teams need to be shielded from unnecessary intrusion. As the Knowledge Commons is removed from the immediate work areas of the researchers, interruptions can be minimised. The following spaces will cater for strategic planning sessions, presentations and discussion sessions:
    - Auditorium: An auditorium with seating for about 50 people will be equipped with video conferencing equipment and a 'smart board' to expand opportunities for distributed collaboration and remote learning. Talks, lectures and presentations by CSIR staff and external speakers will be scheduled on a regular basis. Topics can vary between those with a strictly work related focus and those with a more general or actuality theme.
    - Conference room: This area can accommodate up to 18 people in a formal boardroom layout or a more informal arrangement.
    - Smaller meeting rooms: Seating for 6 people and 10 people respectively will be available.

- Social Space:
  The Knowledge Commons will provide several social spaces:
    - A coffee shop environment will be created where employees can hold less structured meetings with clients or other knowledge workers.

- Reading area: Due to the geographical distribution of staff, the CSIR subscribes, where possible, to the electronic format of journals and information resources. However, many researchers have a definite preference for reading certain scientific publications in paper format. These types of journals as well as newspapers and reference publications will be available in the reading area. The area will be furnished with journal display shelves, newspaper stands and small groupings of comfortable chairs, couches and coffee tables.
- Project display area: This part will be used to display and showcase research projects and technology demonstrations.

For assistance, a help desk will be manned by an information specialist. This individual will also be required to regularly create deliberate opportunities for researchers to interact and share knowledge.

The Knowledge Commons, scheduled to open by August 2008, is about creating a facility with the potential to become the science showcase for the CSIR and to attract audiences for CSIR appropriate dialogue in order to stimulate research and technological innovation. It will provide space where external visitors can informally interact with knowledgeable research staff.

TIPS ON BUILDING BRIDGES TO INFORMATION

1. Align your goals with that of the organisation. Use every opportunity to advocate the vital role that information plays in conducting high level research. Be on the agenda of as many executive meetings as possible.

2. Know your allies and draw on their influence. Top researchers are usually the people who are the biggest users of information and of the information services. They are also highly respected and their opinions are regarded as worthy of serious consideration. Having friends in high places will go a long way towards persuading authorities to fund wide ranging access to information.

3. Demonstrate the value that the information services add to the organisation.
   - Keep records of the savings as a result of the negotiations done by the information services staff or the consortium they belong to and "blow your trumpet" at every opportunity. It is quite awesome to see just how much we have actually saved.
   - Make sure your banner is on the products for which you have arranged access. Most of the large platforms allow this and it can be added very easily by the administrator.
   - Evangelize at every opportunity. Many researchers will think they have found full text articles "free" on the internet if there is no 'education of the users' or an indication of where these documents are coming from.
   - Make full use of and support open access initiatives. Keep up to date with what is available to support your company or organisation's research areas. Carefully selected blogs and RSS feeds like Gary Price's Resource Shelf and regular scanning of information related magazines and journals can be invaluable in keeping up to date.

- Provide very selective dissemination of information to senior decision makers – stating the product name and directly linking to the article soon convinces them of the value of the product.

4. Ask! We have been amazed at the willingness of suppliers to negotiate and make it possible for us to purchase content even when we thought we would never be able to afford it. Do your homework and look for alternative ways of accessing specific resources or change to similar, more affordable products.

5. Build good relationships with the publishers and their agents. They are often as keen to have you as a client as you are to access their products.

6. Make it easy for the user to access the information. At the CSIR we make use of IP recognition. Even when staff work from home they are able to access products via the CSIR's proxy server.

7. Open source software: Use OS products for federated searching, link resolvers, electronic resource management and institutional repositories. However, it is important to ensure that you have access to knowledgeable technical support.

8. Developing countries especially those in the low income bands of the World Bank Country Classification list, can benefit enormously from the many initiatives that promote free or low cost access to information for those who cannot afford to pay commercial prices.

9. Open Access resources are becoming widespread and give access to very valuable information. Keep up to date with what's available and connect!

Endnotes

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