

Link Resolvers : Faster Than A Speeding Locomotive!



What do we want?

□ Information Managers:

Value for money!

Standardisation

Good control over our resources

What do we want?

□ Users:

Everything. Right now!

Where's the right place to search?

How do I

get accurate answers?

How do I navigate to related resources?

How do I obtain the actual results?

To the rescue: Link Resolvers!

Link Resolvers & OpenURL

OpenURLs are the foundation stone of Link Resolvers

Open URL  Link Resolver  Intelligent Linking

OpenURLs

- “the OpenURL standard is a syntax to create web-transportable packages of metadata and/or identifiers about an information object” www.niso.org
- A standardized mechanism to transport metadata describing an object, encoded in a URL

OpenURLs

- “The OpenURL framework is built on the principle that the full-text of an article can be defined by a set of metadata elements (ISSN, volume, issue, etc.) rather than by a specific URL.”

Ferguson & Gregg; Computers in Libraries; Oct 2004; Vol 24; Issue 9

- An OpenURL is a particular type of URL. It consists of an address to point to a link resolver / link server, and a string of bibliographic data in a standard format.

OpenURLs

- ❑ Regular URLs can't take into account the identity of the user. Since different users have different access rights, links should resolve to match individual users.
- ❑ To do this, a link should be able to a) package the metadata describing the object and b) send this metadata to a link resolver. The resolver will be aware of the user's identity and supply links to relevant targets.
- ❑ ----- they solve the 'appropriate copy' problem!

OpenURLs

- “By disconnecting the provision of metadata from the provision of linking services, users can indicate a *preferred service component* that will provide links irrespective of the resource they are navigating ... The OpenURL is the enabling mechanism for open linking from resources.”

Herbert Van de Sompel & Oren Beit-Arie
D-Lib Magazine; March 2001; Vol 7; Issue 3

Link Resolvers

- ❑ Takes the OpenURL and applies it to a library's specific subscriptions. It is OpenURL compliant because it can receive and understand this metadata.
- ❑ Designed to provide seamless links between resources
- ❑ The internet equivalent of a reference desk

- ❑ SFX (ExLibris)
WebBridge (Innovative Interfaces)
VLink (Geac)
LinkSource (EBSCO)
Linkfinder Plus (Endeavour)
Article Linker (Serials Solutions)

Link Resolvers

□ So how does it work its magic?

1. Takes the incoming bibliographic details contained in a URL
2. Checks those details against the database of information about a library's holdings and entitlements
3. Connects the user to the appropriate copy
4. User gets what they need and rushes off to tell others about brilliant library facilities ... maybe

Fixed Linking

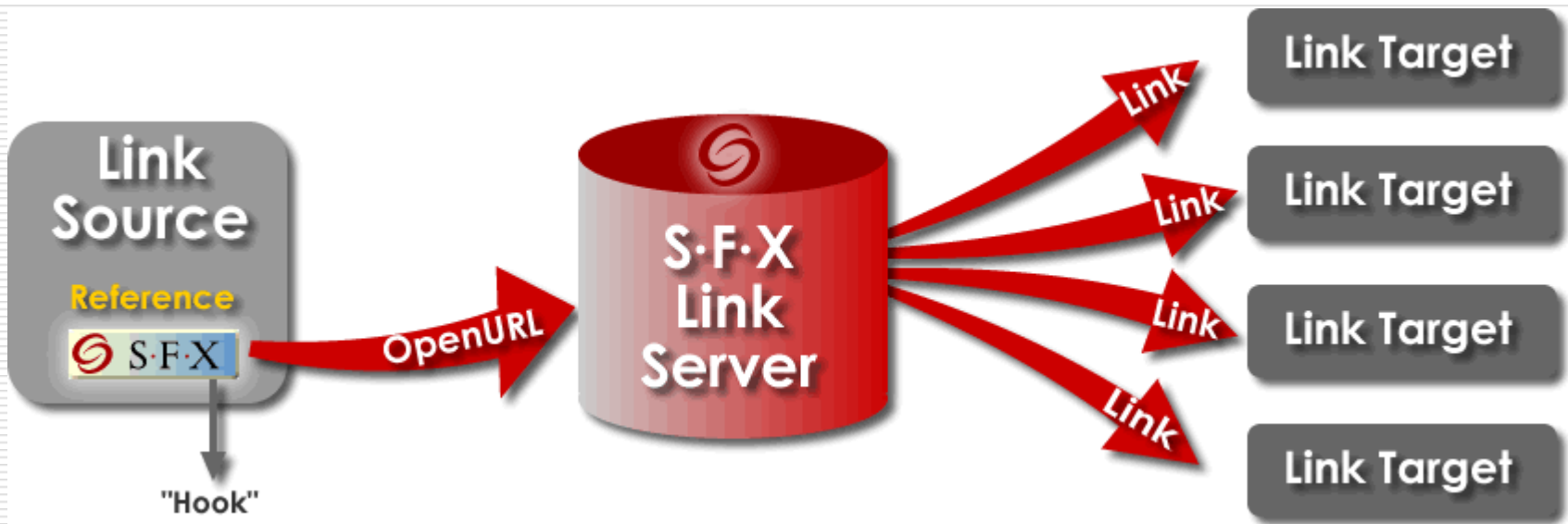


[Courtesy Ex Libris]

<http://publish.stuff.org/abstract/PRA/v63/p062103>

Links are fixed to pre-selected targets
Links still have to be maintained to allow for changes in
databases – to avoid the '404' error

Intelligent Linking



[Courtesy Ex Libris]

<http://sfx.nuigalway.ie/menu?genre=article&issn=1234-5678&volume=12&issue=3&spage=1&epage=8&date=1998&aulast=Murphy&aufirst=Paddy>

A Closer Look at the OpenURL

OpenURL Server / Link
Resolver

<http://sfx.nuigalway.ie/menu?genre=article&issn=1234-5678&volume=12&issue=3&spage=1&epage=8&date=1998&aurlast=Murphy&aurlfirst=Paddy>

Object Metadata

SFX - Let's define it first.....

□ Actually, before we get onto that:

SFX stands for '*Special Effects*'

SFX users include:

NASA; Yale; Boston; British Library

SFX - Let's define it first.....

□ The official cumbersome definition:

“SFX is a context sensitive link server from ExLibris that allows context-sensitive linking between Web resources in the scholarly linking environment” (sfxit.com)

□ A slightly better explanation:

“The SFX server from Ex Libris is an ISC (institutional service component) that can read an OpenURL as input and take action upon it” (sfxit.com)

SFX defined

□ Which basically means

SFX is a tool for navigation and discovery that provides users with context-sensitive services that are defined by Librarians

From a particular resource, it can link directly to (for example) the full text of an e-journal article in a different resource, or to the catalogue record of print journals

How does it work?

- Sources
- Metadata
- Targets
- KnowledgeBase

Sources



- A source is where a user would be starting their search, e.g. a reference or a citation
 - Must be OpenURL compliant

- Source Services

The list of options a user can retrieve based on the source metadata

'get full-text'

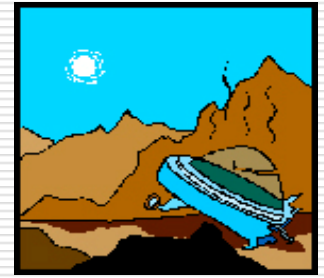
'find author'

'show local holdings' etc

Metadata

- Data about data
- A metadata record consists of a set of attributes, or elements, necessary to describe the resource in question

Targets



- It's where the user 'lands'. SFX relies on existing link-to or search syntax for this. A variety of such syntaxes exist, depending on the provider. The deeper the link possible, the more effective SFX will be.
- Targets are items to which the user wishes to link. Can be anything - database, website, conference proceeding.....

KnowledgeBase

- The backbone of any link resolver
- Where the library's electronic collections are defined – to enable the resolver to compute the appropriate services for the user's search
- Takes metadata in an OpenURL, matches it against library subscription information and returns a link

KnowledgeBase

S·F·X ADMIN CENTER

Admin_Center > **KBManager** > Sources | Targets | Search Objects [OpenURL Generator](#) | [Log Off](#)

List of Targets

Available: 52 targets Database: sfx_test_01 Filter Target List:

• AMAZON to IEEE XPLORE JOURNALS

#	Target	Threshold	Modified	Active	Action
<input type="checkbox"/>	1 <input type="button" value="E"/> <input type="button" value="V"/> AMAZON		S P 2004/02/17	<input checked="" type="radio"/> Y	<input type="button" value="C"/>
<input type="checkbox"/>	2 <input type="button" value="E"/> <input type="button" value="V"/> AMERICAN_CHEMICAL_SOCIETY	\$obj->timediff(<='4y')	S P 2004/11/19	<input checked="" type="radio"/> Y	<input type="button" value="C"/>
<input type="checkbox"/>	3 <input type="button" value="E"/> <input type="button" value="V"/> AMERICAN_MEDICAL_ASSOCIATION		S P 2004/09/20	<input checked="" type="radio"/> Y	<input type="button" value="C"/>
<input type="checkbox"/>	4 <input type="button" value="E"/> <input type="button" value="V"/> ASSOCIATION_FOR_COMPUTING_MACHINERY_ACM		S P 2004/08/05	<input checked="" type="radio"/> Y	<input type="button" value="C"/>
<input type="checkbox"/>	5 <input type="button" value="E"/> <input type="button" value="V"/> BIOMED_CENTRAL		S P 2004/09/23	<input checked="" type="radio"/> Y	<input type="button" value="C"/>
<input type="checkbox"/>	6 <input type="button" value="E"/> <input type="button" value="V"/> CAMBRIDGE_UNIVERSITY_PRESS		S P 2004/09/20	<input checked="" type="radio"/> Y	<input type="button" value="C"/>
<input type="checkbox"/>	7 <input type="button" value="E"/> <input type="button" value="V"/> CELL_PRESS		S P 2004/09/20	<input checked="" type="radio"/> Y	<input type="button" value="C"/>
<input type="checkbox"/>	8 <input type="button" value="E"/> <input type="button" value="V"/> CHADWYCK_LITERATURE_ONLINE		S P 2004/09/23	<input checked="" type="radio"/> Y	<input type="button" value="C"/>
<input type="checkbox"/>	9 <input type="button" value="E"/> <input type="button" value="V"/> DOAJ_DIRECTORY_OPEN_ACCESS_JOURNALS_FREE		S P 2004/09/23	<input checked="" type="radio"/> Y	<input type="button" value="C"/>
<input type="checkbox"/>	10 <input type="button" value="E"/> <input type="button" value="V"/> EBSCOHOST_BUSINESS_SOURCE_PREMIER		S P 2004/09/23	<input checked="" type="radio"/> Y	<input type="button" value="C"/>
<input type="checkbox"/>	11 <input type="button" value="E"/> <input type="button" value="V"/> EBSCOHOST_HEALTH_SOURCE_NURSING_ACADEMIC		S P 2004/09/23	<input checked="" type="radio"/> Y	<input type="button" value="C"/>
<input type="checkbox"/>	12 <input type="button" value="E"/> <input type="button" value="V"/> EBSCOHOST_PSYCHOLOGY_AND_BEHAVIORAL_SCI		S P 2004/11/12	<input checked="" type="radio"/> Y	<input type="button" value="C"/>
<input type="checkbox"/>	13 <input type="button" value="E"/> <input type="button" value="V"/> ELSEVIER_HEALTH_MOSBY		S P 2004/09/20	<input checked="" type="radio"/> Y	<input type="button" value="C"/>
<input type="checkbox"/>	14 <input type="button" value="E"/> <input type="button" value="V"/> ELSEVIER_SD_SCIENCE_DIRECT		S P 2004/07/27	<input checked="" type="radio"/> Y	<input type="button" value="C"/>
<input type="checkbox"/>	15 <input type="button" value="E"/> <input type="button" value="V"/> EMERALD		S P 2004/09/23	<input checked="" type="radio"/> Y	<input type="button" value="C"/>
<input type="checkbox"/>	16 <input type="button" value="E"/> <input type="button" value="V"/> GOOGLE_SCHOLAR		S P 2005/02/24	<input checked="" type="radio"/> Y	<input type="button" value="C"/>
<input type="checkbox"/>	17 <input type="button" value="E"/> <input type="button" value="V"/> HEIN_ONLINE		S P 2004/09/23	<input checked="" type="radio"/> Y	<input type="button" value="C"/>
<input type="checkbox"/>	18 <input type="button" value="E"/> <input type="button" value="V"/> HUMMER_PRESS_FREE		S P 2004/02/17	<input checked="" type="radio"/> Y	<input type="button" value="C"/>

View
 Edit
 Copy
 Delete
 Usernames/Passwords
 Portfolios
 Services
 Y N Active (Yes/No)
 Info

KnowledgeBase

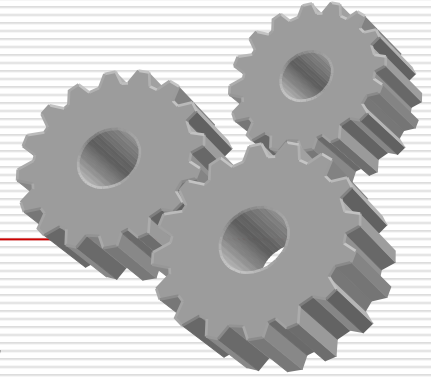
S.F.X ADMIN CENTER


Admin Center > KBManager > Sources | Targets | Search Objects [OpenURL Generator](#) | [Log Off](#)

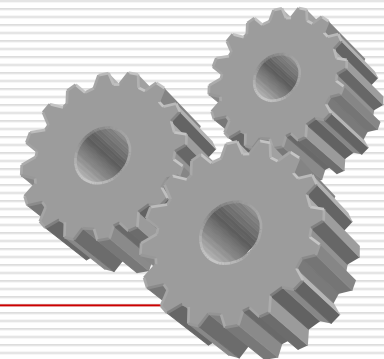
List of Portfolios for DOAJ_DIRECTORY_OPEN_ACCESS_JOURNALS_FREE

#	Target	Service Object	Threshold	Mod.	Act.Action
<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> E <input type="checkbox"/> V	DOAJ_DIRECTORY_OPEN_ACCESS_JOURNALS_FREE	getFullTxd 0002-9920 Notices of the Ameri...	\$obj->parsedDate(">=",1995,undef,undef)2004/09/23	<input type="checkbox"/> Y <input type="checkbox"/> C
<input type="checkbox"/>	<input type="checkbox"/> 2 <input type="checkbox"/> E <input type="checkbox"/> V	DOAJ_DIRECTORY_OPEN_ACCESS_JOURNALS_FREE	getFullTxd 0007-9235 CA	\$obj->parsedDate(">=",1990,undef,undef)2004/09/23	<input type="checkbox"/> Y <input type="checkbox"/> C
<input type="checkbox"/>	<input type="checkbox"/> 3 <input type="checkbox"/> E <input type="checkbox"/> V	DOAJ_DIRECTORY_OPEN_ACCESS_JOURNALS_FREE	getFullTxd 0008-4409 Canadian Medical Ass...	\$obj->parsedDate(">=",1997,undef,undef)2004/09/23	<input type="checkbox"/> Y <input type="checkbox"/> C
<input type="checkbox"/>	<input type="checkbox"/> 4 <input type="checkbox"/> E <input type="checkbox"/> V	DOAJ_DIRECTORY_OPEN_ACCESS_JOURNALS_FREE	getFullTxd 0012-7086 Duke law journal	\$obj->parsedDate(">=",1997,undef,undef)2004/09/23	<input type="checkbox"/> Y <input type="checkbox"/> C
<input type="checkbox"/>	<input type="checkbox"/> 5 <input type="checkbox"/> E <input type="checkbox"/> V	DOAJ_DIRECTORY_OPEN_ACCESS_JOURNALS_FREE	getFullTxd 0019-8646 IBM Journal of rese...	\$obj->parsedDate(">=",1993,undef,undef)2004/09/23	<input type="checkbox"/> Y <input type="checkbox"/> C
<input type="checkbox"/>	<input type="checkbox"/> 6 <input type="checkbox"/> E <input type="checkbox"/> V	DOAJ_DIRECTORY_OPEN_ACCESS_JOURNALS_FREE	getFullTxd 0022-3859 Journal of postgradu...	\$obj->parsedDate(">=",2000,undef,undef)2004/09/23	<input type="checkbox"/> Y <input type="checkbox"/> C
<input type="checkbox"/>	<input type="checkbox"/> 7 <input type="checkbox"/> E <input type="checkbox"/> V	DOAJ_DIRECTORY_OPEN_ACCESS_JOURNALS_FREE	getFullTxd 0025-5165 Matemati"ki vesnik	\$obj->parsedDate(">=",1993,undef,undef)2004/09/23	<input type="checkbox"/> Y <input type="checkbox"/> C
<input type="checkbox"/>	<input type="checkbox"/> 8 <input type="checkbox"/> E <input type="checkbox"/> V	DOAJ_DIRECTORY_OPEN_ACCESS_JOURNALS_FREE	getFullTxd 0030-8730 Pacific journal of m...	\$obj->parsedDate(">=",1997,undef,undef)2004/09/23	<input type="checkbox"/> Y <input type="checkbox"/> C
<input type="checkbox"/>	<input type="checkbox"/> 9 <input type="checkbox"/> E <input type="checkbox"/> V	DOAJ_DIRECTORY_OPEN_ACCESS_JOURNALS_FREE	getFullTxd 0035-8835 Journal of the Royal...	\$obj->parsedDate(">=",1997,undef,undef)2004/09/23	<input type="checkbox"/> Y <input type="checkbox"/> C
<input type="checkbox"/>	<input type="checkbox"/> 10 <input type="checkbox"/> E <input type="checkbox"/> V	DOAJ_DIRECTORY_OPEN_ACCESS_JOURNALS_FREE	getFullTxd 0042-1294 Uspekhi fizicheskikh...	\$obj->parsedDate(">=",1994,undef,undef)2004/09/23	<input type="checkbox"/> Y <input type="checkbox"/> C
<input type="checkbox"/>	<input type="checkbox"/> 11 <input type="checkbox"/> E <input type="checkbox"/> V	DOAJ_DIRECTORY_OPEN_ACCESS_JOURNALS_FREE	getFullTxd 0074-0276 Memórias do Institu...	\$obj->parsedDate(">=",1994,undef,undef)2004/09/23	<input type="checkbox"/> Y <input type="checkbox"/> C
<input type="checkbox"/>	<input type="checkbox"/> 12 <input type="checkbox"/> E <input type="checkbox"/> V	DOAJ_DIRECTORY_OPEN_ACCESS_JOURNALS_FREE	getFullTxd 0091-3847 The Physician and sp...	\$obj->parsedDate(">=",1996,undef,undef)2004/09/23	<input type="checkbox"/> Y <input type="checkbox"/> C
<input type="checkbox"/>	<input type="checkbox"/> 13 <input type="checkbox"/> E <input type="checkbox"/> V	DOAJ_DIRECTORY_OPEN_ACCESS_JOURNALS_FREE	getFullTxd 0103-6440 Brazilian dental jou...	\$obj->parsedDate(">=",1990,undef,undef)2004/09/23	<input type="checkbox"/> Y <input type="checkbox"/> C
<input type="checkbox"/>	<input type="checkbox"/> 14 <input type="checkbox"/> E <input type="checkbox"/> V	DOAJ_DIRECTORY_OPEN_ACCESS_JOURNALS_FREE	getFullTxd 0104-8500 Journal of the Brazi...	\$obj->parsedDate(">=",1994,undef,undef)2004/09/23	<input type="checkbox"/> Y <input type="checkbox"/> C
<input type="checkbox"/>	<input type="checkbox"/> 15 <input type="checkbox"/> E <input type="checkbox"/> V	DOAJ_DIRECTORY_OPEN_ACCESS_JOURNALS_FREE	getFullTxd 0138-4821 Beiträge zur Algebr...	\$obj->parsedDate(">=",1993,undef,undef)2004/09/23	<input type="checkbox"/> Y <input type="checkbox"/> C
<input type="checkbox"/>	<input type="checkbox"/> 16 <input type="checkbox"/> E <input type="checkbox"/> V	DOAJ_DIRECTORY_OPEN_ACCESS_JOURNALS_FREE	getFullTxd 0256-4947 Annals of Saudi medi...	\$obj->parsedDate(">=",1994,undef,undef)2004/09/23	<input type="checkbox"/> Y <input type="checkbox"/> C
<input type="checkbox"/>	<input type="checkbox"/> 17 <input type="checkbox"/> E <input type="checkbox"/> V	DOAJ_DIRECTORY_OPEN_ACCESS_JOURNALS_FREE	getFullTxd 0268-4000 ...	\$obj->parsedDate(">=",1999,undef,undef)2004/09/23	<input type="checkbox"/> Y <input type="checkbox"/> C

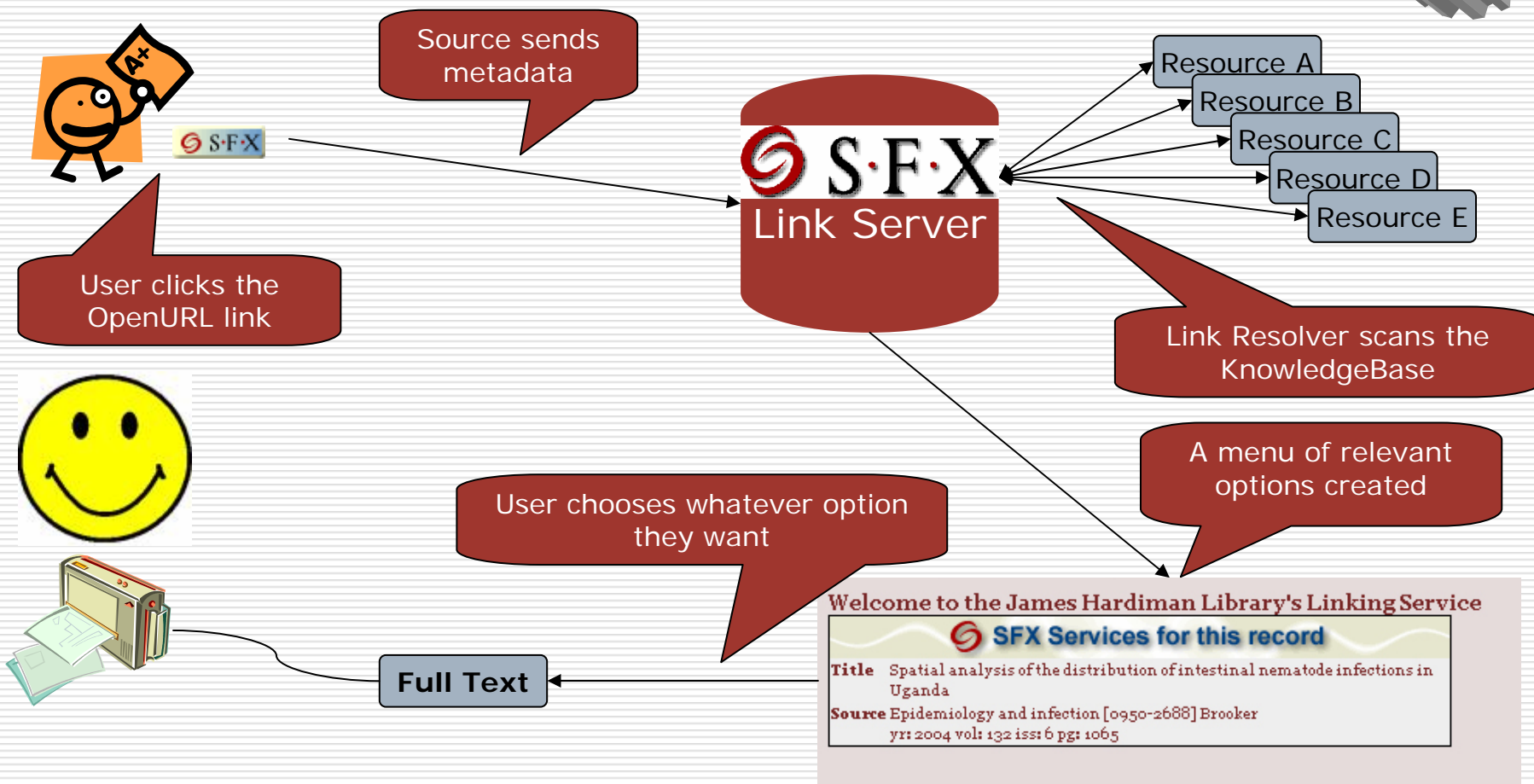
How it works [for users]



- ❑ User searches a database and gets a result
- ❑ Very easy – just push the button 
- ❑ Menu appears
- ❑ Choose option from menu
- ❑ Automatic link to user's choice
- ❑ Caveat – OpenURL compliancy



How it works [behind the scenes]



SFX In Action

The image illustrates the SFX workflow across three stages:

- SFX Source:** The CSA ILLUMINA search results page for the query 'trout ireland'. A search result is highlighted, showing the article title and authors.
- SFX Menu:** The SFX by Ex Libris (USA) Inc. interface, which provides a menu of options for the selected record, including 'Full text available via Synergy Blackwell S', 'Search table of contents in ZETOC', and 'Need some help? Try our SFX FAQ...'. The 'Full text available via Synergy Blackwell S' option is highlighted in orange.
- SFX Target:** The Blackwell Publishing abstract page for the article 'The Irish sea trout enhancement programme: an assessment of the parr stocking programme into the Burrishoole catchment'. The 'Full Text Article' button is highlighted in orange.

SFX Source



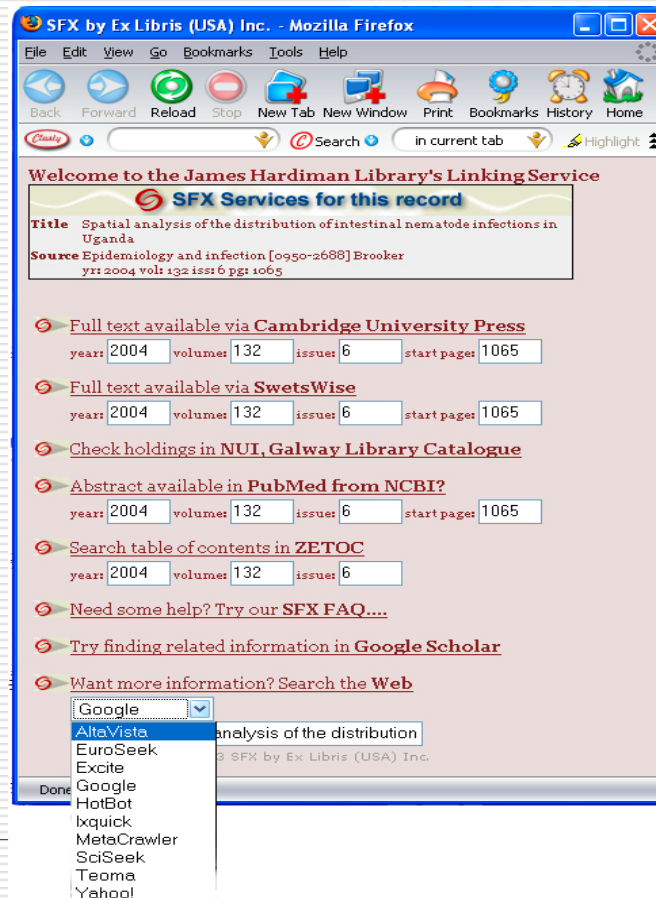
SFX Menu



SFX Target

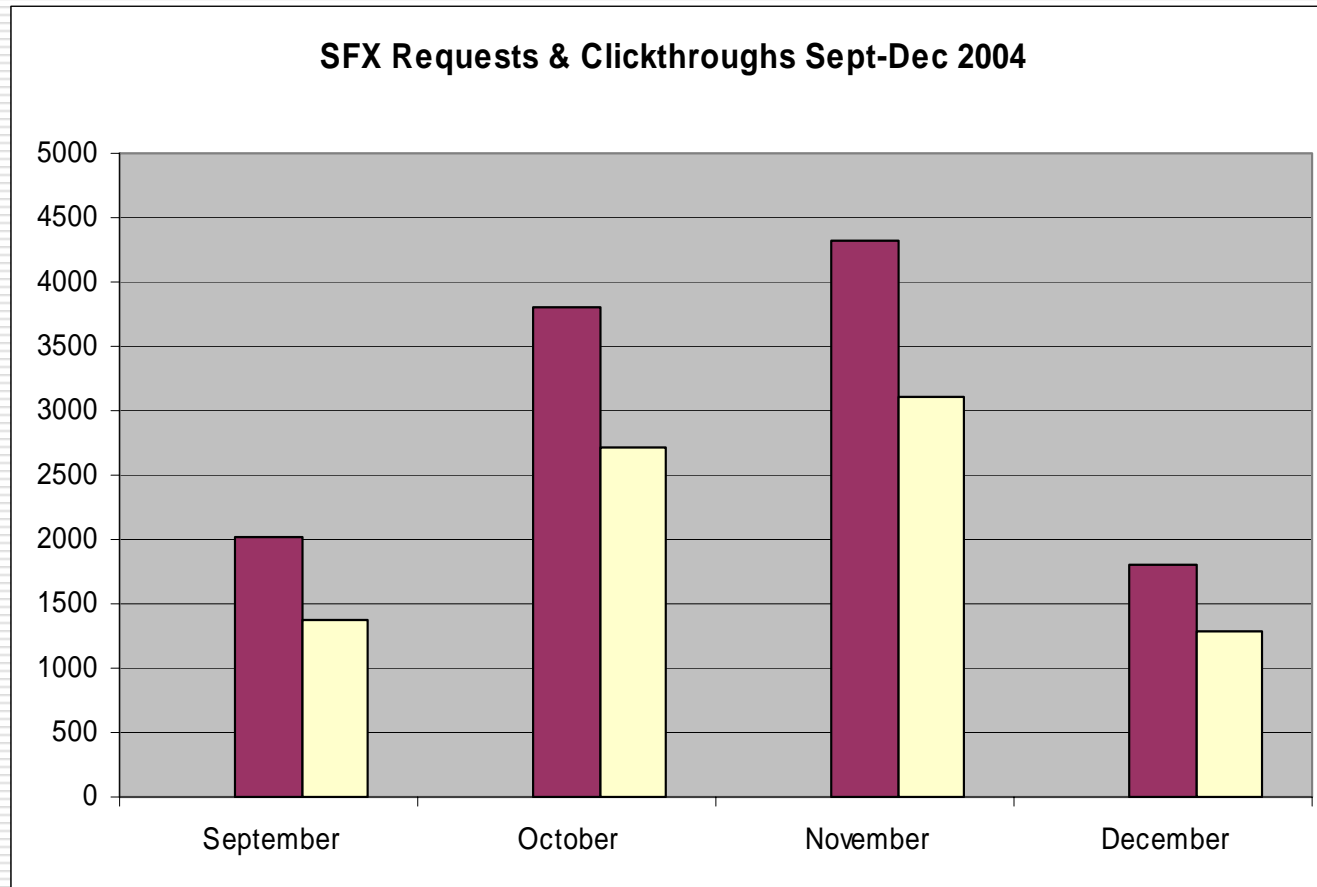
Another look at the SFX menu

- Version 2; Version 3 out now



Statistics

(the more the better!)

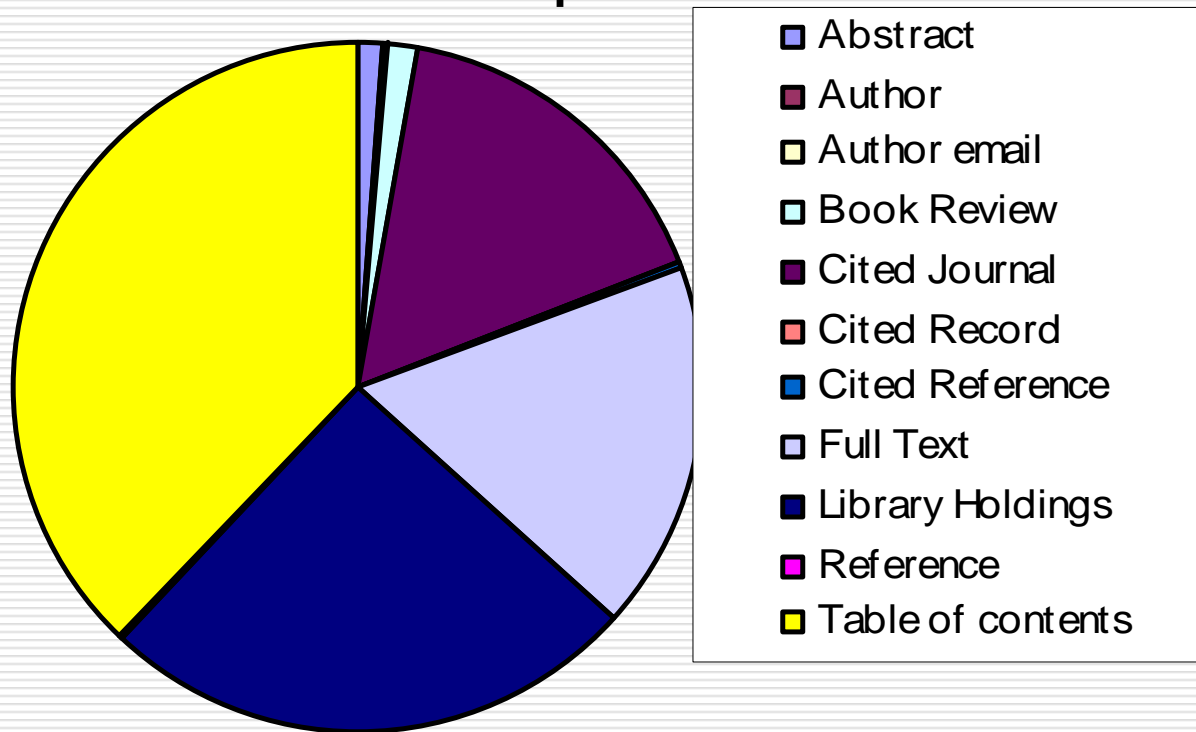


Statistics

	<u>Requests</u>	<u>Clickthroughs</u>
□ September – December 2004 (4 months)	11940	8489
□ January – February 2005 (2 months)	9131	7378

Statistics

Services Used Sept 2004



Statistics

Top Targets Sept. 2004

Host	Clickthroughs
Library Catalogue	355
Zetoc	206
Swetswise	196
Web Searches	132
Science Direct	131
Ulrichs	82
SFX FAQ	72
Kluwer	56
EBSCO Businss Source Premier	29
Amazon	25

The best thing since pants with pockets?

- ❑ It's very quick
- ❑ It's very easy to use – user empowerment
- ❑ It negates the need to know what is contained where
- ❑ Fewer dead links
- ❑ Extra Services
 - if full-text is not available electronically the user can seamlessly check the catalogue for a paper copy or ILL
- ❑ SFX can create a customizable alphabetical journal title list for the website

The best thing since pants with pockets?

- ❑ Changes our approach to the structure of e-resources
– standardisation
- ❑ Solves the appropriate copy problem
- ❑ Everything is context sensitive
- ❑ Increases the value of resources by increasing their usage

The best thing since pants with pockets?

❑ Science Foundation Ireland / Irish Research Electronic Library

❑ Some example targets & stats :-

January 2005

Synergy (Blackwell Science)	84
SpringerLink	18
Wiley InterScience	73
Kluwer	61

BUT...

- ❑ The KnowledgeBase is never completely right
- ❑ Pay-per-search databases
- ❑ Not all potential link resolver sources are Open-URL compliant
- ❑ The OpenURL built by the link is only as good as the metadata provided by the source
- ❑ Deep-level linking varies
- ❑ Does it lead to 'dumbing down'??

Before you buy one ...

- Remote/local hosting & pricing impact
- Subscription/purchase
- Ability to customize
- Statistics capability
- Can a title list be generated?
- How many journals can it track?
- Regular KnowledgeBase updates?
- Can the link server search your OPAC?