

# Context in Enterprise Search and Delivery

**David Hawking, Cecile Paris,  
Ross Wilkinson, Mingfang Wu  
CSIRO**

## Our Message:

- § Context is important
- § Context can be too expensive to capture
- § Context is easier to acquire in the enterprise
- § Look for low cost context capture for high benefit

# Context

- § The context of a search is important – see Nordlie (Sigir'99)
- § Elements of context we see as important:
  - § **Who? – the user**
  - § **What? – the task**
  - § **From where? – what sources of information**
  - § **Where? – the environment – e.g. with PDA access**
  - § **Up to? – what point in a discourse – what is known so far, what goals have been agreed, what is uncertain?**
- § This all looks a lot harder than a two word query – is it worth it??

# Enterprise Search and Delivery

When searching in an enterprise, we may know more about:

- § The users – they are typically employees – and some information is able to be accessed
- § The tasks – some tasks are common, and knowable – even though a full task model may be beyond us
- § The information sources – this is not generic web search – information might be from intranet, databases, purpose specific file systems

# Query Formulation

- § It is reasonable to assume employees are not any more likely to issue long queries. It may be possible to know why somebody is querying very simply – which search box is used?
- § For example, on an enterprise intranet, it is not uncommon to see several search boxes:
  - § Find a person
  - § Find a document in the intranet or enterprise file server
  - § Find an email
- § This can make a significant difference, by triggering search of different sources, searching in different ways, and then delivering in the context of the task.

Welcome to the CSIRO Intranet - Microsoft Internet Explorer - [Working Offline]

File Edit View Favorites Tools

Back Forward Stop Refresh Home

Address <http://www.csiro.au/intranet/index.asp> Go Links

Google Search Web 1 blocked AutoFill Options

# CSIRO Intranet

## Staff Services & Information

[Intranet Home](#) [About the Intranet](#) [Intranet Site Index](#) [Intranet Help](#) [Contact Us](#)

### Staff Group Resources

Select a group

### Personal Staff Services & Resources

Pay, leave, petty cash claims, jobs, HR issues...

### The Benevolent Fund

The Benevolent Fund is run by staff for staff and exists to assist employees past and present in times of need.

[Read More...](#) [Suggest a news item](#)

### Quick Staff Lookup

practices, resources...

### Strategic Priorities

CSIRO, ans...

### Resources for Scientists

Publications, people, money, libraries & equipment...

### CSIRO Traveller's Kit

Air travel, hotels, cars, credit cards...

### Intranet Search

Search by staff surname or id

[Staff & Location](#)

[Search Tips](#) [Advanced Search](#)

### Initiatives

[Biotechnology Strategy](#)  
[CSIRO IT](#)  
[CSIRO Science Forum](#)  
[CSIRO.au](#)  
[Emerging Science](#)

### HOT TOPICS

[Career Management Portfolio](#)  
[CSIRO IT](#)  
[iCMS](#)

### News and Events

[Calendar of Events](#)  
[Monday Mail](#)  
[News and Media](#)  
[CSIRO in the News](#)  
[Bulletin Board](#)  
[What's New on the Intranet](#)

Internet

Web Search

People finder

Intranet Search

# What happens then?

- § Each search can trigger a different search type, over different data, using different algorithms, delivering different results
- § A single search engine is not the answer!
- § (Does it make any sense to average over different query types??)
- § P.S. a great new class of search engines: World Wind, Google Earth – note the different query types here.

# Matching and Ranking

- § Good enterprise ranking:
  - § “standard document ranking” – BM25
  - § “web ranking” – content + link info
  - § “email matching” – a structured document – From, To, Date, subject may all be more important than content matching – see Dumais
- § Multiple query/matching/delivery – each with different data/matching algorithms – see Infotrieve LSRC
- § ..but what is easy and would work most of the time?
  - § Query augmentation using personal profile (Teevan..)
  - § Prior modification based on role (Freund..)
  - § Generic search fallback

# Delivery in context

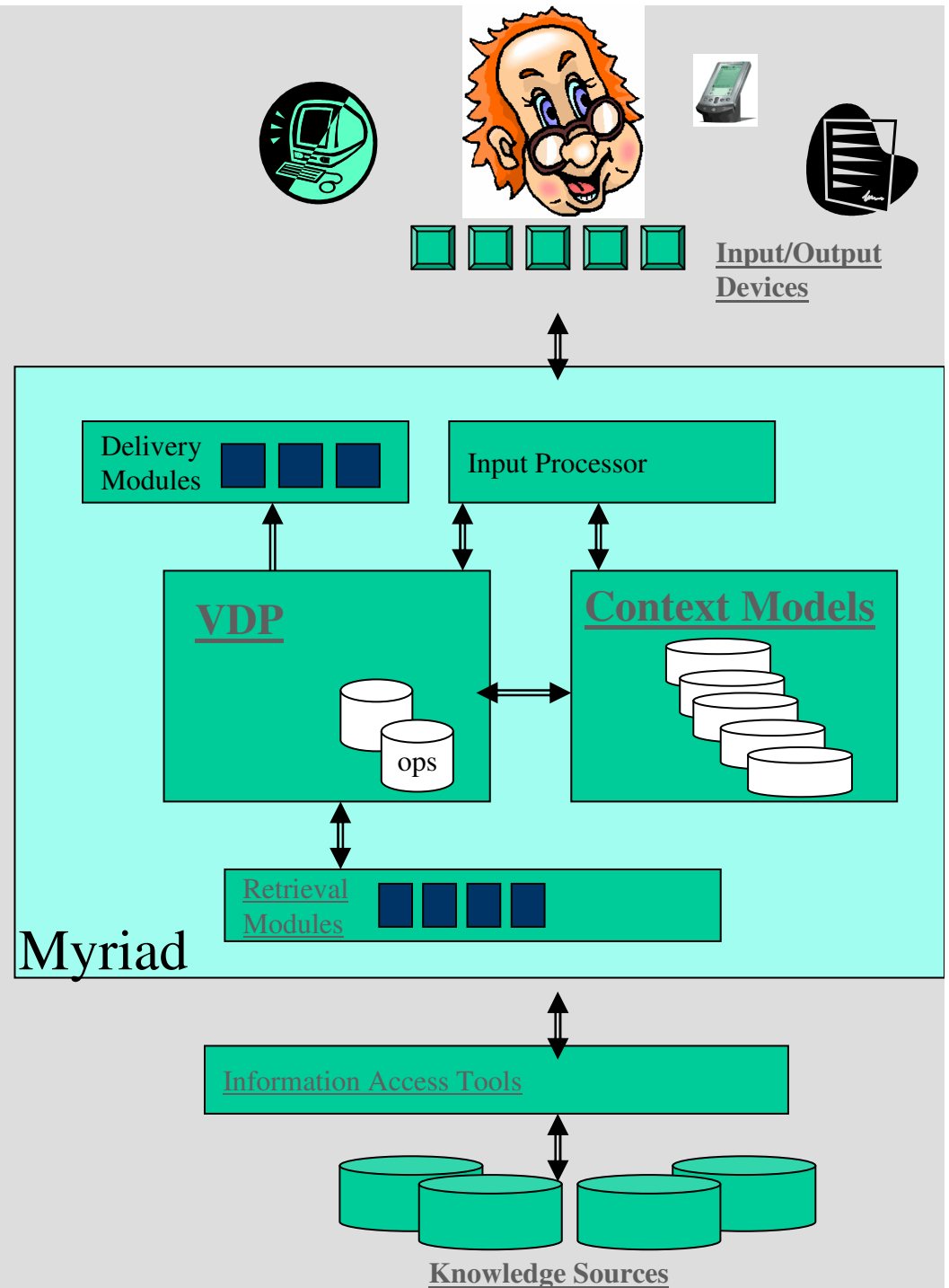
- § Context elements:
  - § **Who? – the user**
  - § **What? – the task**
  - § **From where? – what sources of information**
  - § **Where? – the environment – e.g. with PDA access**
  - § **Up to? – what point in a discourse – what is known so far, what goals have been agreed, what is uncertain?**
- § How can this be exploited?
- § What gives “bang for buck”?

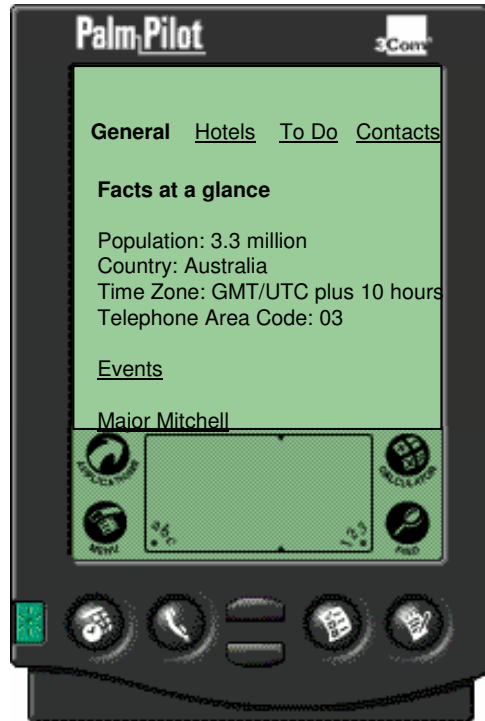
# Exploiting context

- § Use discourse theory – RST (Mann and Thompson)
- § Use delivery to drive querying, matches
- § Can be very complex!

# An Architecture for Contextualised Information Retrieval and delivery

- An extensible, generalised information retrieval/delivery architecture for supporting knowledge intensive tasks
- General enough to support many applications.
- Currently used in a number of projects.





# Brochure – Business

## A Personalised CSIRO Guide for Alex

### An Introduction to CSIRO:

We are one of the world's largest and most diverse scientific research institutions. Our work touches just about every aspect of Australian life: everything from the molecules of life to the molecules in space - finding ways to improve our quality of life and economic performance.

Our 6500 staff perform research and development over a broad range of areas of economic and social value including: agriculture, minerals and energy, manufacturing, communications construction, health, the environment.

### Divisions of CSIRO that might interest you:

At CSIRO Mathematical and Information Sciences, we solve problems across a wide range of industries using our skills base and the results of our research in information technology, mathematics and statistics.

CSIRO Telecommunications and Industrial Physics (CTIP) applies its engineering and scientific expertise to developing the technological advancements essential for industry's competitive advantage.

### CSIRO and Your Business:

For most companies the cost of establishing and maintaining a major research centre is prohibitive. We offer an alternative by giving industry access to a world competitive research and development facility.

Translating research results into practical industrial products and processes is a vital part of CSIRO's activities. We serve companies of all sizes across a diversity of industries. Our client range from large multi-nationals who utilise our specialist skills to fill gaps where they lack expertise to small and medium sized enterprises who turn to us to help develop their core technological strategies and products.

Our capabilities in serving commercial clients are well established. We have a depth of business skills including specialist project managers who ensure contracts are professionally executed and completed on time and within budget.

We are alert to the commercial sensitivities of our work. Issues such as confidentiality ownership of technology, conflicts and competitive restrictions are negotiated up front and adhered to on a strict basis.

For more information, visit the "Doing Business with CSIRO" webpage, at:

<http://csiro.au/format.asp?id=industry/index.xml>

### Research about: Image Analysis in the Medical Sector

There are two projects that are relevant to your query terms: *medical* and *image analysis*. CTIP and CMIS are both working on applications in this area.

### Knowledge-based "Expert Assistants" for Radiologists (CTIP)

#### Description:

CSIRO Australia (Telecommunications and Industrial Physics) is addressing the opportunities created by PACS and increasing use of digital information systems in Radiology through its "Medical Image Understanding" project. This work has created a means of using anatomical knowledge to enable machines to understand medical images in a way completely analogous to human experts. By combining knowledge-based image analysis with medical imaging the group has created powerful generic tools which will bring "intelligence" to medical workstations speeding analysis and reducing tedium and the risk of missed diagnoses.



#### Key Benefits:

- Automatically identifies major features in a chest X-ray;
- Detects a range of abnormalities mainly associated with lung boundaries and density;
- Carries out a number of measurements (e.g. cardiothoracic ratio);
- Produces a "report" in familiar radiological terms;
- Permits user intervention for manual identification of specific structures with the system re-computing its segmentation based on this manual segmentation;
- Performs image database searches based on system-generated indexing terms;
- Performs image searches based on similarity of radiological signs.

#### Scientific Collaborators

- St Vincents Hospital Sydney
- Royal Prince Alfred Hospital Sydney

- Department of Radiological Sciences, UCLA School of Medicine
- Department of Computer Science and Engineering, University of NSW

#### Web page:

[http://www.tip.csiro.au/scripts/relationships/render.asp?page\\_id=249&hist=172&left=1443](http://www.tip.csiro.au/scripts/relationships/render.asp?page_id=249&hist=172&left=1443)

#### Contact Details:

Contact Laurie Wilson at [laurie.wilson@tip.csiro.au](mailto:laurie.wilson@tip.csiro.au) for more details.

### Melanoma Identification (CMIS)

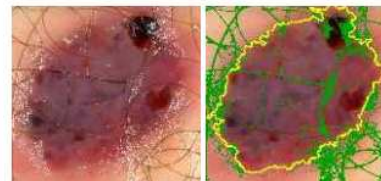
#### Description:

Melanoma is the most dangerous form of skin cancer. It can spread through the whole body and is usually fatal if it does. Over 1000 Australians die each year as a result of melanoma.

Skin cancer can be caused by excessive exposure to the sun. Australia has the highest incidence of skin cancer in the world, due to its geographical location and the fact that most of its inhabitants have fair skins and enjoy an outdoor lifestyle.

Skin cancers, in particular melanomas, can be easily cured if detected early. At present, the diagnostic accuracy of all clinicians (including specialists) is not high. Since most GPs rarely encounter melanomas, it is unrealistic to expect them to diagnose correctly in all cases.

This project aims to create a machine which could be used in a GP's surgery as an "artificial specialist" with expertise in the diagnosis of melanoma. The tool used in this project is image analysis.



#### Web page:

<http://www.cmis.csiro.au/ap/RecentProjects/melanoma.htm>

#### Contact Details:

Leanne Bischof  
Image Analyst & Statistician,  
CMIS, Sydney

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Fax: +61 2 9325 3200

#### Press Releases:

<http://www.csiro.au/page.asp?type=mediaRelease&id=cancerprobe>

#### Other Relevant Projects:

- Medical diagnostic imaging.
  - o Contacts: Dr Rob Gill
- Bioeffects of ultrasound (and em radiation).
  - o Contact: Dr Stan Barnett
- Ultrasonic characterisation of blood.
  - o Contact: Dr Tony Collings
- SAW biosensors and applications.
  - o Contact: Dr Tony Collings
- Bioinformatics
  - o Contact: Dr. Mervyn Thomas
- Hapto-Visual Based Medical Training
  - o Contact: Dr. Duncan Stevenson
  - o <http://www.cmis.csiro.au/mvs/>

#### Further Contact Details:

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Industrial Physics

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Email:  
[denis.redfern@tip.csiro.au](mailto:denis.redfern@tip.csiro.au)

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[Kevin.Cryan@cmis.csiro.au](mailto:Kevin.Cryan@cmis.csiro.au)



# Brochure – Student

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### Knowledge-based "Expert Assistants" for Radiologists (CTIP)

#### The Research Group:

The Image & Signal Processing Discipline has as its main focus the identification and description of semantic content in images and its use in image analysis and interpretation. To achieve this goal two distinct approaches are being pursued and for each a range of theoretical and computational tools are being developed.

Content-based imaging where higher-level constructs within an image are inferred from the image itself or from a class of similar images. This approach makes use of computer learning and pattern recognition methods and may be thought of as exemplar-based computer learning. Current applications of content-based methods include: human face recognition; the location tracking and identification of people in video streams; and image and video database searches on the basis of content.

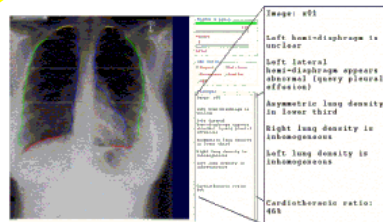
Knowledge-based imaging where external knowledge typically from human experts is used to

identify and classify semantic image content and to perform tasks such as image segmentation and interpretation. This method is analogous to rule-based learning in humans.

Knowledge-based methods have been applied to problems of medical image understanding for example the use of anatomical knowledge in the interpretation of chest x-rays and the analysis of aortic aneurysms using 3D CT imagery.

#### Project Description:

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#### Publications:

Unfortunately, no publications by this group could be found.

#### Contact Details:

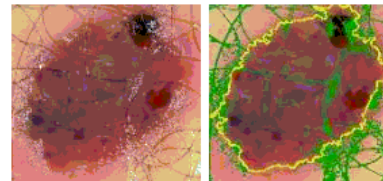
Contact Laurie Wilson at [laurie.wilson@tip.csiro.au](mailto:laurie.wilson@tip.csiro.au) for more details.

### Melanoma Identification (CMIS)

#### The Research Group:

The Image Analysis Group at CSIRO Mathematical and Information Science (CMIS) has expertise in the automated extraction and analysis of quantitative information from digital images. This

includes the following activities: \* automated object segmentation and feature extraction \* statistical analysis of extracted features \* stereo vision \* image motion and tracking \* spectroscopy and hyperspectral imaging \* development of fast, sophisticated algorithms and software for image analysis \* development and delivery of prototype image analysis software. The techniques that we have developed have been applied in a number of industrial, biomedical, metallurgical and mining applications.



#### Project Description:

Melanoma is the most dangerous form of skin cancer. It can spread through the whole body and is usually fatal if it does. Over 1000 Australians die each year as a result of melanoma.

Skin cancer can be caused by excessive exposure to the sun. Australia has the highest incidence of skin cancer in the world, due to its geographical location and the fact that most of its inhabitants have fair skins and enjoy an outdoor lifestyle.

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#### Web page:

<http://www.cmis.csiro.au/lap/RecentProjects/melanoma.htm>

#### Publications:

Unfortunately, publications associated with this project could not be found. Here are the three most recent publications by this research group.

- M. Berman. Invited discussion on "a penalized likelihood approach to image warping". *Journal of the Royal Statistical Society: Series B*, 63(3), 2001. To appear.
- P. Soille and H. Talbot. Directional morphological filtering. *PAMI*, 2001. To appear.
- C. Sun. De-interlacing of video images using a shortest path technique. *IEEE Transactions on Consumer Electronics*, 47(2):225-230, May 2001.

#### Contact Details:

Leanne Bischof  
E-mail: [Leanne.Bischof@cmis.csiro.au](mailto:Leanne.Bischof@cmis.csiro.au)  
Telephone: +61 2 9325 3206

#### Press Releases for this Project:

<http://www.csiro.au/page.asp?type=mediaRelease&id=canceprobe>

This research group was recently in the news spotlight:

#### Powerline Eyes Help Prevent Bushfires

New technology developed by CSIRO and Powercor Australia is set to help protect communities from bushfires by dramatically reducing the cost of keeping trees clear of powerlines. The technology will make it possible for power companies to measure the distance of tree branches from powerlines from the air, which will save money presently spent on manual inspection, particularly in country areas.

#### Studying with CSIRO:

For more information about studying with CSIRO please visit our website:

<http://www.csiro.au/format.asp?id=educatn/index.xml>

#### Educational Resources:

Organised by the Intelligent Interactive Technologies (IIT) research group, the HAIL seminar series at CSIRO Mathematical and Information Sciences (in Sydney) provides a forum for researchers and members of the industrial community to present and discuss work related to Human Computer Interaction, Artificial Intelligence and Natural Language. Topics include (but are not limited to) task analysis and modelling, usability engineering, knowledge based systems, knowledge discovery, software engineering, language technology, dialogue systems and multi-media systems. The seminar series includes both academic and industrial presentations

When: 11am on (alternate) Tuesdays  
Where: CMIS conference room, Building E6B, Macquarie University



# Delivery “bang for buck”

- § The “buck” can be high
- § The “bang” is not easy to determine:
- § Value:
- § Utility, accuracy (in use of human attention), cognitive load, preference
- § Possible approach – use discourse to inform, but create custom solutions only for high value tasks

## Putting it together:

- § When you know task, you initiate task specific search
- § Apply task specific matching, based on task specific data
- § Deliver appropriate to need and circumstances

# Enterprise Search

- § ≠ Web search!
- § Different sources
- § Different crawling approach
- § Different link structure
- § Different algorithms
- § True for both intranet and extranet search
- § ...there is not a single enterprise search



CSIRO

# CSIROonline

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- [Emerging Science Areas](#)

### Current Highlights

- [Postgraduate Programs 2005](#)
- [CSIRO Diet and Nutrition Information](#)
- [Horizons in Livestock Sciences Conference](#)
- [Gene Technology in Australia](#)

### Features

- [Doing Business with CSIRO](#)
- [Careers in CSIRO](#)
- [Education](#)
- [Global Development](#)

### Spotlight

#### New fumigant to replace gas that damages ozone layer

CSIRO and the global industrial gas company the BOC Group have signed a deal to deliver to the international market a new environmentally-safe fumigant for treating soil, insect pests, weeds and diseases.



### Breaking News

[Media Room](#)

- [New Chief for CSIRO Minerals](#)
- [Advances in 'gene silencing' on conference agenda](#)
- [Keep up the effort on bridal creeper](#)
- [Threatened green sawfish tracked in Gulf of Carpentaria](#)
- [CSIRO semiconductor science in successful spin-off](#)

Search: CSIRO External [ Updated: Sep 6 2004 ]

PANOPTIC SEARCH  
"melbourne university" search

[ Query: "melbourne university" -- Documents: 249 fully matching plus 0 partially matching ]

Fully matching documents

1 100 [CSIRO PUBLISHING - Publishing Partners](#)

... **Melbourne University** Publishing New and Old Land New Landscapes New A Story of Farmers Conservation and the Landcare Movement All Titles Sort alphabetically Sort by publication date Top Email this page Terms Legal Notice Contact Help CSIRO 2004 ...  
<http://www.publish.csiro.au/nid/23/pubid/203.htm> - 18k - [Cached](#) - No Date

2 96 [CSIRO PUBLISHING - Publishing Partners](#)

... **Melbourne University** Press All Titles Sort alphabetically Sort by publication Backyard Click Computers and Learning in Classrooms K Flight of the Emu A Hundred Years of Australian Ornithology 1901 Insects of Introduction to AUTOCAD Lake Mungo Window to Australia s ...  
<http://www.publish.csiro.au/nid/23/pubid/52.htm> - 20k - [Cached](#) - No Date

3 83 [untitled](#)

... Getting to **Melbourne University** Taxis from the Airport Taxis are available from the ground floor level of **Melbourne** Airport Expect to pay around A\$32 to A\$35 for the 30 minute trip into the centre of **Melbourne** a little less going ... little less going direct to **Melbourne** Uni Ask the driver to drop you in Swanston St near the corner of Faraday St opposite Monash Rd on campus or near the corner of Elgin St opposite Tin Alley on campus SKYBUS ... is three blocks from the **University** Alternatively you can catch the 96 Tram from Spencer St railway station to the corner of Bourke and Swanston Streets then catch any tram marked **Melbourne** Uni going north up Swanston St all the ...  
[http://www.atnrf.csiro.au/whats\\_on/workshops/mm\\_science2001/melb\\_dirs.html](http://www.atnrf.csiro.au/whats_on/workshops/mm_science2001/melb_dirs.html) - 3k - [Cached](#) - No Date



Searching Westpac [ Updated: Jul 12 2004 ]

PANOPTIC SEARCH

"home loan"

[ Query: "home loan" Refine this query -- Documents: 260 fr

Fully matching documents

1. The Home Loan Centre - Calculators

Summary: ... Home Loan Centre Calculator JAVA SCRIPT Error The Page enabled. Please refer to your browser help for assistance in enabling JAVA funds in my home loan until I need them for other things Premium Option prefer to keep my funds separate from my home loan account Rocket Rep http://hlc1.westpac.com.au/hlc/hlc/Savings1.do - 23k - [ do ] - Cached: 1 - N

2. Westpac Internet Home Loan Centre

Summary: ... Home Loans Personal Loans Credit Cards Transaction Savin International Services Today... Disclaimer and use of Home Loan Centre In Copyright ... Home Loans Home Loan Centre Free guide to homebuying O http://www.westpac.com.au/Internet/Publish.nsf/Content/PBHL+Home+Loan

3. The Home Loan Centre - Track your application online

Summary: ... through a mobile manager or over the phone, you can track y Entitlement Certificate here ... Home Loan Centre Track your application o



Main menu

- ▶ Online Banking
- ▶ Online Investing
- ▶ Apply Online
- ▶ eShopping
- Investor Centre
- News & Updates
- Social accountability
- In the community
- Annual Report
- Careers
- Global Locations
- ▶ Calculators
- ▶ Our Privacy Policy
- ▶ Security
- ▶ home

Results Information  
Query ("home loan") - Search Found 0 documents displayed.

Your search did not find any documents.

General advice on this website has been prepared without taking into acco situation or needs. Before acting on the advice, consider its appropriatenes documents, which include Product Disclosure Statements (PDS) for some p when deciding whether to acquire or hold a product.

By accessing and viewing this website you agree to be bound by the Terms Copyright © 2004 Westpac Banking Corporation ABN 33 007 467 141



Product search

- Video
- DVD
- Books
- Music
- Spoken Word
- Clothing
- TC

Browse by brand

- ABC For Kids
- ABC Kids
- Fly
- Triple J

Browse interest

Australiana, Ballet, Celtic, Children's, Nostalgia...

Browse ABC Labels

- ABC Audio
- ABC Books
- ABC Classics
- ABC Contemporary Music
- ABC DVD
- ABC Magazines
- ABC Video

Need some help?

**THE GOODIES**  
8 DELICIOUS EPISODES

Goodie, goodie, yum, yum!  
At last **The Goodies** are available on DVD!

**2 DVD SET**

ABC DVD

Watch...



Platypus - DVD

Listen...

**Allegri Miserere Music CD.**  
Sacred Music of the Renaissance.  
\$30.95



Read...



Sam Kekovich

Best selling

1. The Goodies 2 DVD set
2. Allegri Miserere Music of the Renaissance Music CD
3. Delicious - September 2003 Magazine

New releases

**Lizzie McGuire**  
The seriously cool Lizzie sings the songs from ...



**Rowan of the Bukshah**  
The witch Sheba has spoken, and Rowan knows he ...



**Emily Rodda**  
The witch Sheba has spoken, and Rowan knows he ...

Spoken Word > New releases

**Panoptic**

# Impact:

## CSIRO Search:

Ease of implementation

Coverage

Quality of search

## Bank Search:

Coverage

Quality of Search

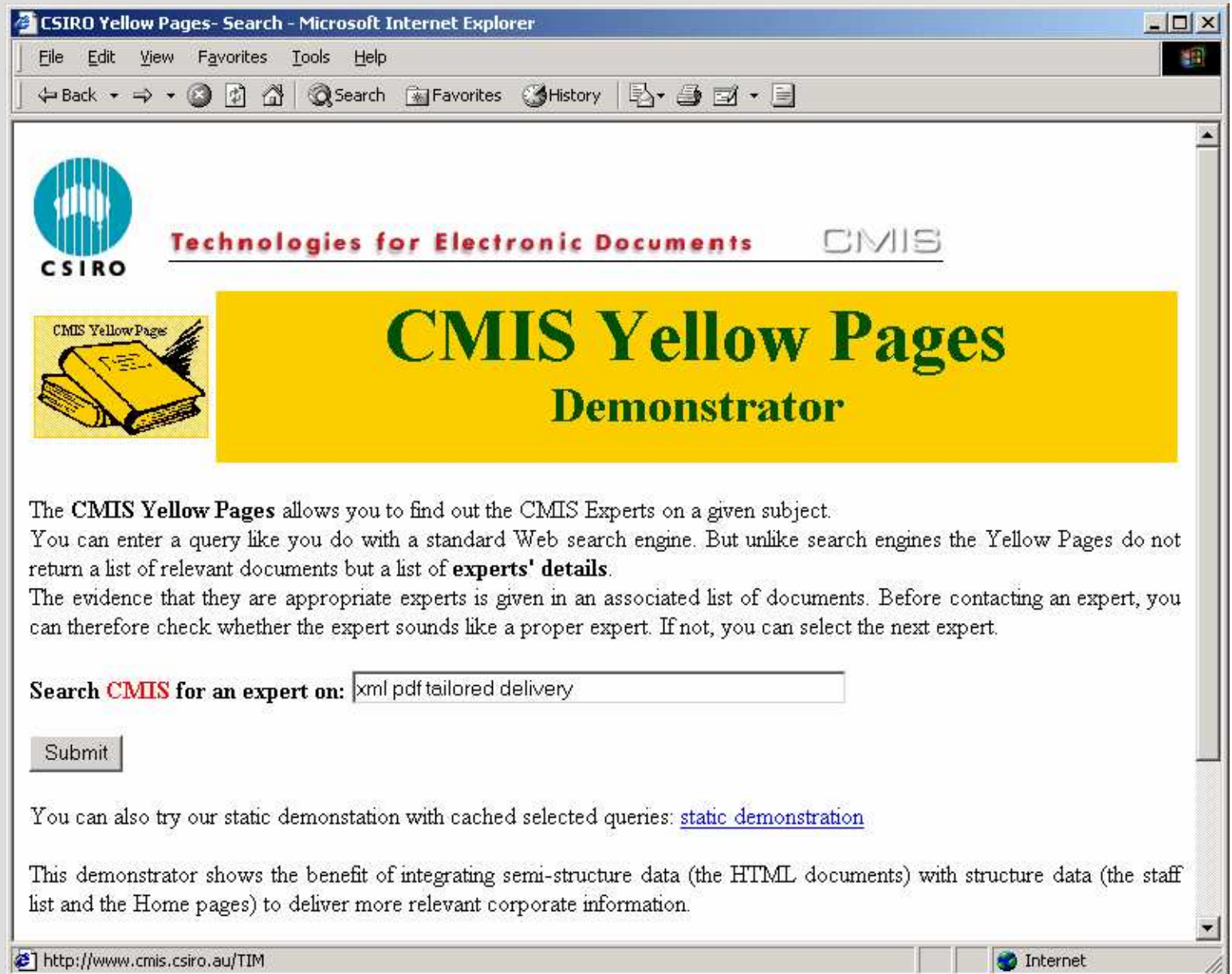
Embarrassment

## ABC Search:

Sales – increased by 24%!!

Coverage

# People Search:



The screenshot shows a Microsoft Internet Explorer browser window with the title "CSIRO Yellow Pages - Search - Microsoft Internet Explorer". The address bar contains the URL "http://www.cmis.csiro.au/TIM". The browser's menu bar includes "File", "Edit", "View", "Favorites", "Tools", and "Help". The toolbar features "Back", "Forward", "Stop", "Home", "Search", "Favorites", "History", and "Print".

The main content area displays the CSIRO logo on the left, followed by the text "Technologies for Electronic Documents" and "CMIS". A large yellow banner contains the text "CMIS Yellow Pages Demonstrator" in green. To the left of the banner is a small illustration of a stack of books labeled "CMIS Yellow Pages".

Below the banner, the text reads: "The **CMIS Yellow Pages** allows you to find out the CMIS Experts on a given subject. You can enter a query like you do with a standard Web search engine. But unlike search engines the Yellow Pages do not return a list of relevant documents but a list of **experts' details**. The evidence that they are appropriate experts is given in an associated list of documents. Before contacting an expert, you can therefore check whether the expert sounds like a proper expert. If not, you can select the next expert."

A search form is present with the label "Search **CMIS** for an expert on:" and a text input field containing the query "xml pdf tailored delivery". A "Submit" button is located below the input field.

Below the search form, the text reads: "You can also try our static demonstration with cached selected queries: [static demonstration](#)".

At the bottom, the text reads: "This demonstrator shows the benefit of integrating semi-structure data (the HTML documents) with structure data (the staff list and the Home pages) to deliver more relevant corporate information."

The status bar at the bottom of the browser window shows the URL "http://www.cmis.csiro.au/TIM" and the "Internet" icon.

# CSIRO Yellow Pages are brought to you by the [the TED group](#)

## Contacts details for **Ross Wilkinson**

	<p><b><u>Ross Wilkinson</u></b></p> <p><b>Contact Details</b></p> <p>CSIRO Mathematical and Information Sciences                  Street Address: 723 Swanston Street, Carlton, VIC                  3053, Australia                  Postal Address: (as above)</p> <p>Telephone: 03 8341 8210 or 0419 534 163                  Fax: 03 8341 8222  <a href="mailto:Ross.Wilkinson@crmis.csiro.au">Ross.Wilkinson@crmis.csiro.au</a></p>
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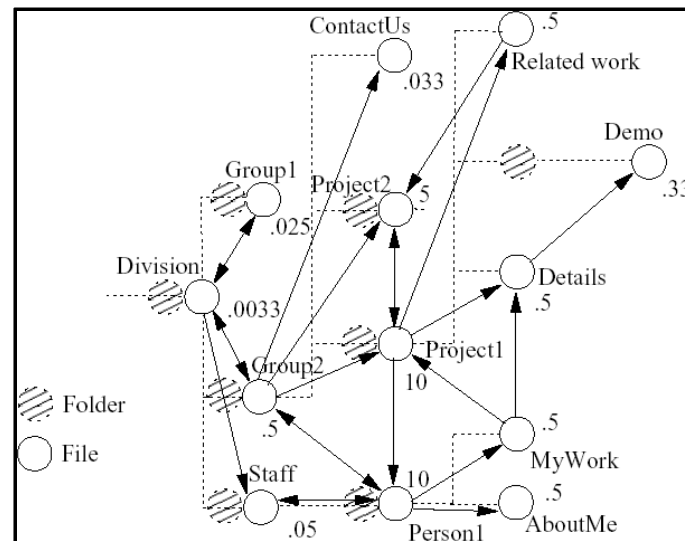
## Other Names associated with **xml pdf tailored delivery**

Name	Phone	Fax	Email	Evidence
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<u>Mingfang Wu</u>	8341 8233	8341 8222	<a href="mailto:Mingfang.Wu@crmis.csiro.au">Mingfang.Wu@crmis.csiro.au</a>	<a href="#">more details and evidence</a>
<u>Shijian Lu</u>	(02) 9325 3152	(02) 9325 3101	<a href="mailto:Shijian.Lu@crmis.csiro.au">Shijian.Lu@crmis.csiro.au</a>	<a href="#">more details and evidence</a>
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<u>Stephen Wan</u>	(02) 9325 3142		<a href="mailto:Stephen.Wan@crmis.csiro.au">Stephen.Wan@crmis.csiro.au</a>	<a href="#">more details and evidence</a>

## Documents Related to **Ross Wilkinson**

# People Search

- f Algorithm for automatically building expertise evidence for finding experts
- f Combines structured corporate information with different content.
- f Evaluation of the algorithm that shows that using organizational structure leads to a significant improvement in the precision of finding an expert.
- f Evaluation of the impact of using different data sources on the quality of the results shows that people search is not a “one engine fits all” solution.



# The Value of Good Enterprise Search

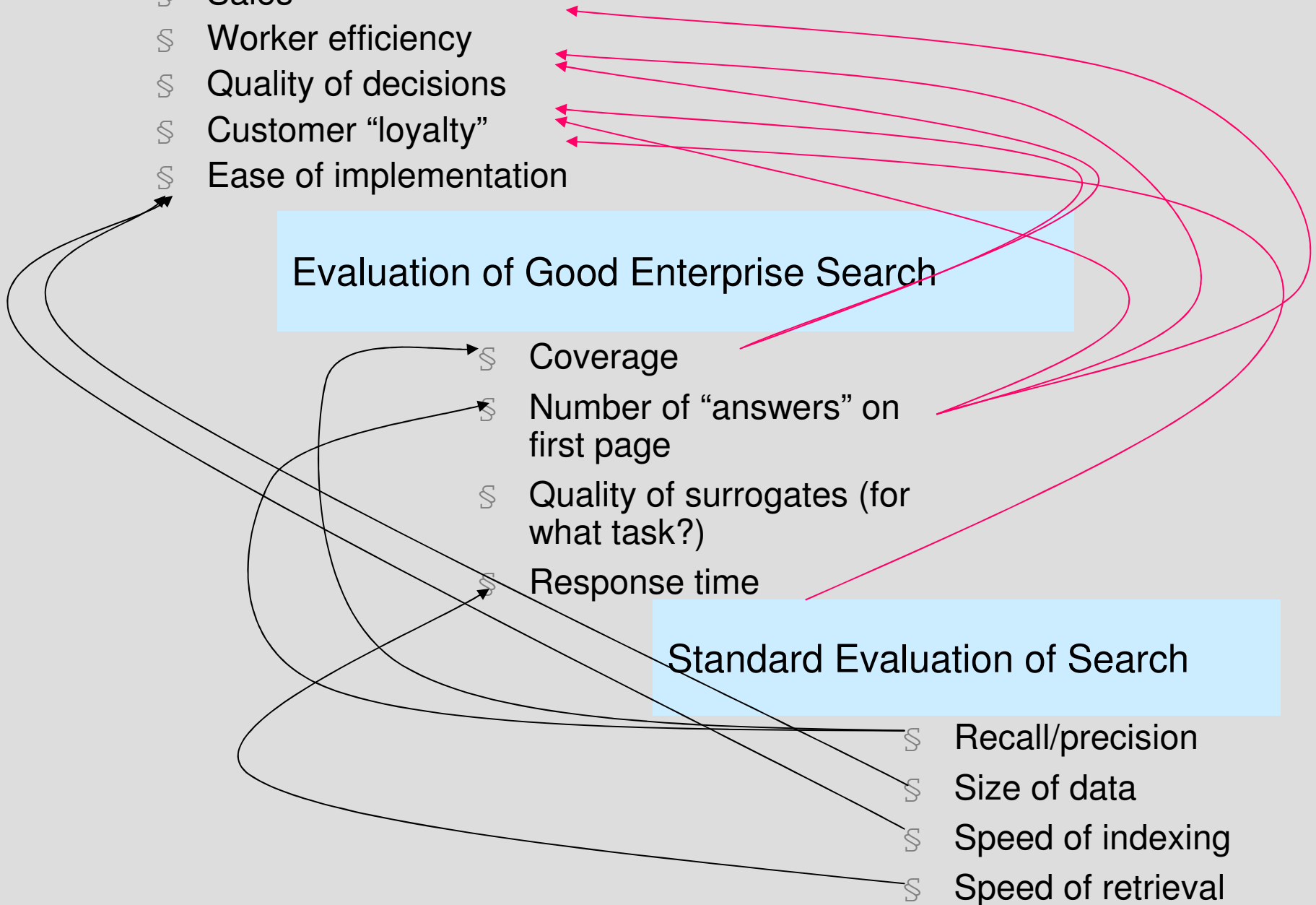
- § Sales
- § Worker efficiency
- § Quality of decisions
- § Customer "loyalty"
- § Ease of implementation

## Evaluation of Good Enterprise Search

- § Coverage
- § Number of "answers" on first page
- § Quality of surrogates (for what task?)
- § Response time

## Standard Evaluation of Search

- § Recall/precision
- § Size of data
- § Speed of indexing
- § Speed of retrieval



# Conclusions:

- § Context is very complex
  - § It should be considered
  - § Partial context can deliver high pay-off
  - § ...with low user effort
  - § ...and variable system effort
- § Current bets:
  - § Some knowledge of task
  - § Task/source modelling (Fruend..)
  - § Some knowledge of delivery context
- § Less clear: personal info, discourse history,

# Discussion

- § Evaluation:
  - § Clearly more than accuracy
  - § Principally about task efficacy? (BfB)
- § How many search systems? What form of average effort – c.f. web track of TREC
- § What context model?
  - § Person, task, source mapping, delivery environment, history
- § Who do we talk to?
  - § UM2001 Workshop on User Modelling for Context-Aware Applications, IUI, CHI, AH2006



# Experimental Contextual IR

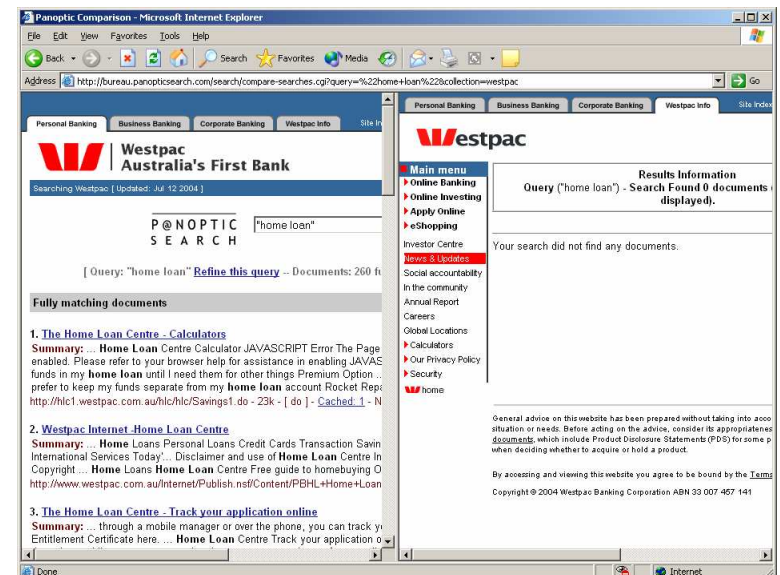
- § 3 forms of experimental approach:
- § Batch: capture “full” context descriptions
- § Interactive light: users perform comparisons only
- § Interactive: elicit user context

# Batch Context

- § Get a full context description
- § Conduct standard IR, but control a set of context parameters
- § The “RAT” – reusable automatic testing framework

# Interactive Light

- § Use context description to elicit users
- § Users issue queries/statements
- § Users select system A or system B using side by side comparison
- § Could be embedding in operational environments
- § Adv: realism
- § Dis: could not work for all forms of context



Personal Banking | Business Banking | Corporate Banking | Westpac info

Address: http://bureau.papricasearch.com/search/computer-searches.csp?query=%22home+loan%22&collection=westpac

Search: P @ N O P T I C [ "home loan" ]  
S E A R C H

[ Query: "home loan" - Refine this query - Documents: 200 ]

Fully matching documents

1. The Home Loan Centre - Calculators  
 Summary: ... Home Loan Centre Calculator JAVA SCRIPT Error The Page enabled. Please refer to your browser help for assistance in enabling JAVA/AS funds in my home loan until I need them for other things Premium Option. ... prefer to keep my funds separate from my home loan account Rocket Rep: http://nic1.westpac.com.au/hic/Savings1.do-23k-[40]-[Cache] 1 - N

2. Westpac Internet Home Loan Centre  
 Summary: ... Home Loans Personal Loans Credit Cards Transaction Saim International Services Today... Disclaimer and use of Home Loan Centre in Copyright ... Home Loans Home Loan Centre Free guide to homebuying O http://www.westpac.com.au/home/Publish.nsf/Content/PBH-Home-Loan

3. The Home Loan Centre - Track your application online  
 Summary: ... through a mobile manager or over the phone, you can track y... Entitlement Certificate here ... Home Loan Centre Track your application o

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- Online Investing
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- In the community
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Results Information  
 Query ("home loan") - Search Found 0 documents (displayed).

Your search did not find any documents.

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# Interactive

- § Elicit user context
- § Elicit user information need
- § Interact with system
- § Elicit user response to interaction

# Context sweet spots

- § Run an experiment that measures benefit
- § Ask customers, find a sweet spot, prove it
- § Look for solutions in enterprise/personal search, rather than web search
  
- § Look at current context successes and build
- § Look at current failures and resolve

## Another set of possibilities

- § Run a user study in very constrained environment
  - § Hypothesize approach
  - § Optimise system, and run against canned model
  - § Run interactive light
- 
- § Start with a canned model, find out what people do with it.
- 
- § Look at search failures where context was the key (be it location, ambiguity, doc. type etc.)

# What sort of context will we explore?

- § Delivery form?
- § Context captured as text that can modify a query
- § Context captured as metadata that can modify structured queries
  
- § Can a librarian be used for capturing context from users as part of the process?