



TORNADO TECH

Text Mining(文字採礦) – 以導覽式分類搜尋來挖掘企業知識資產

龍捲風科技執行長
趙國仁



龍捲風科技
TORNADO TECH

Agenda

- 龍捲風科技簡介
- 全球資訊檢索市場發展介紹
- 現在搜尋技術的問題瓶頸
- 文字採礦的技術與產品
 - 新竹的米粉貢丸為何歷久好吃？
- 總結 Q&A

龍捲風科技

- **成立時間 - 1999年 01月**
- **法人股東**
 - 「宏碁集團」
 - 「建邦投顧公司」
 - 「Walden華登國際創投集團」 2000/6加入
- **資本額 - 新台幣一億九千萬元**
- **員工人數 - 50(TW) + 20 (BJ)人 (2004)**

龍捲風科技(Con.)

- 長期目標
 - International Software Product Company
- 短中期目標
 - The Leading IR Technology Provider in Asia
- 經營理念
 - 專業、誠信、創新、團隊合作
- 成功服務亞太地區（包括大陸、台灣、香港等）八百多個企業客戶群

龍捲風科技(Con.)

- 榮獲2000年資訊月傑出資訊產品肯定
- Intel 64-bit certified partner
- 已獲得美國(2)、日本(1)、中華民國(6)、香港(1)、大陸(4) 共十四個專利，近二十項審核申請，並陸續增加中



參考客戶(台灣)

UMC

acer

 **Winbond**

CyberLink
訊連科技

SIS

 **ViewSonic®**

 **APPLIED MATERIALS® TAIWAN**
台灣應用材料股份有限公司

KingStone

COMPAQ

 **精誠資訊股份有限公司**
SYSWARE CORPORATION

EPSON


CABLE & WIRELESS
HKT
香港電訊

 **TREND MICRO**

 **財團法人資訊工業策進會**
INSTITUTE FOR INFORMATION INDUSTRY

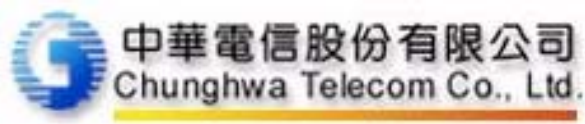
 **臺灣證券交易所**
Taiwan Stock Exchange Corporation

tsmc

VIS

友立資訊
數位·智慧·科技·人

參考客戶(台灣Con.)



參考客戶(香港和新加坡)



香港特別行政區政府
環境運輸及工務局



HkedCity



香港特別行政區政府
康樂及文化事務署



好思科技
Online
Services
development



政府檔案處
Government Records Service



Software System Integrators

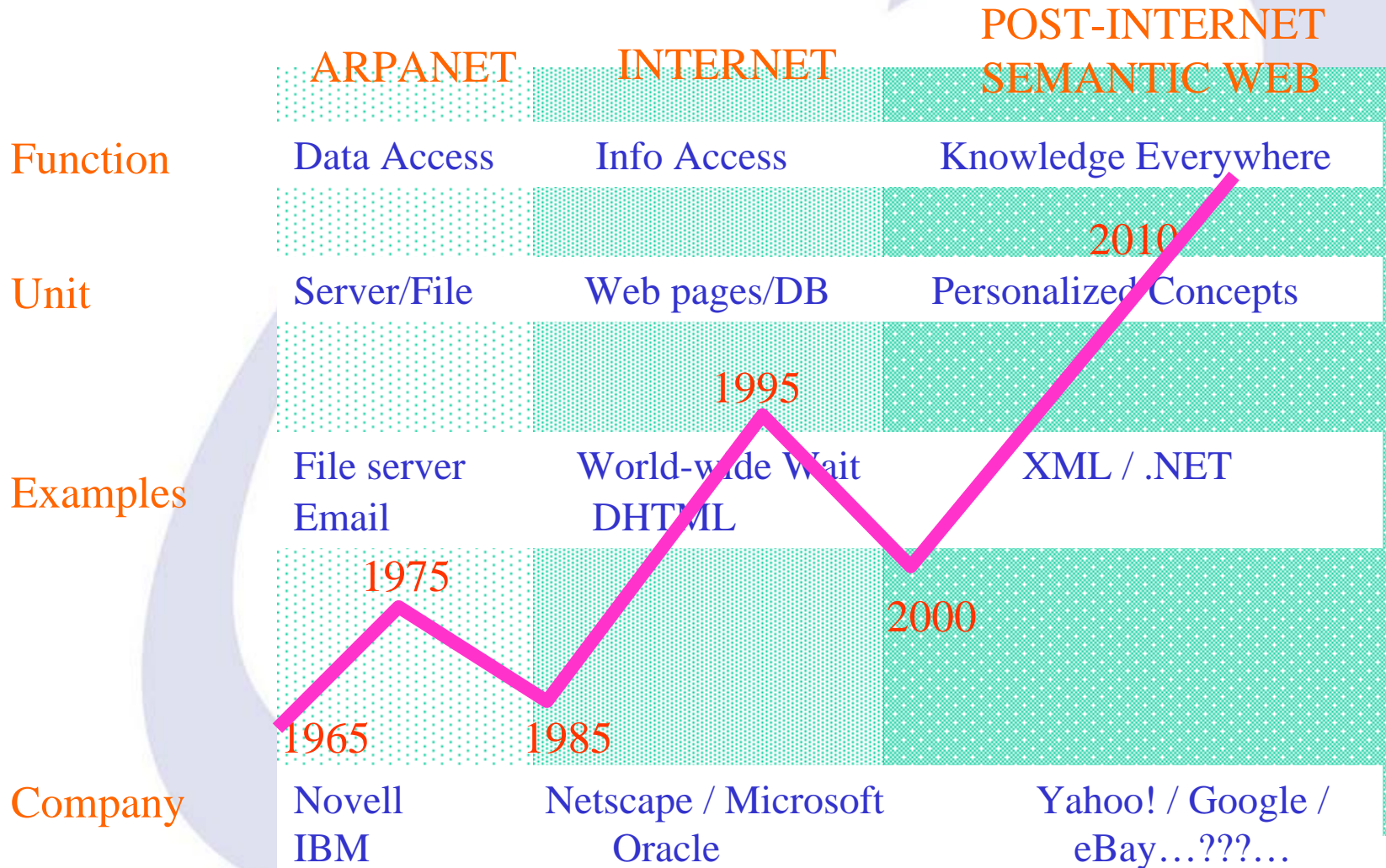


合作夥伴(大陸)



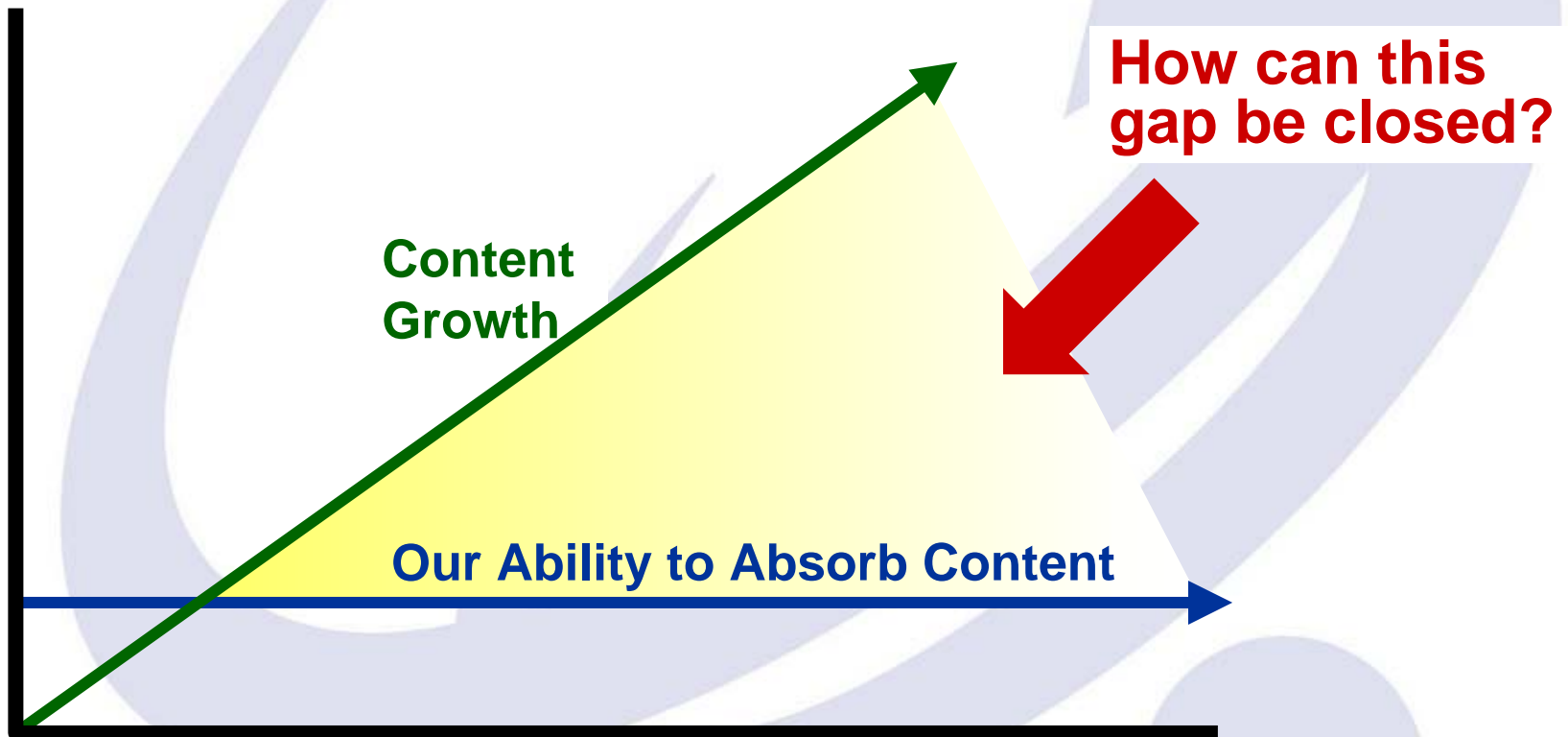
北京凯普计算机软件系统工程公司

資訊軟體科技的趨勢



「資」也無涯、「搜」也有涯

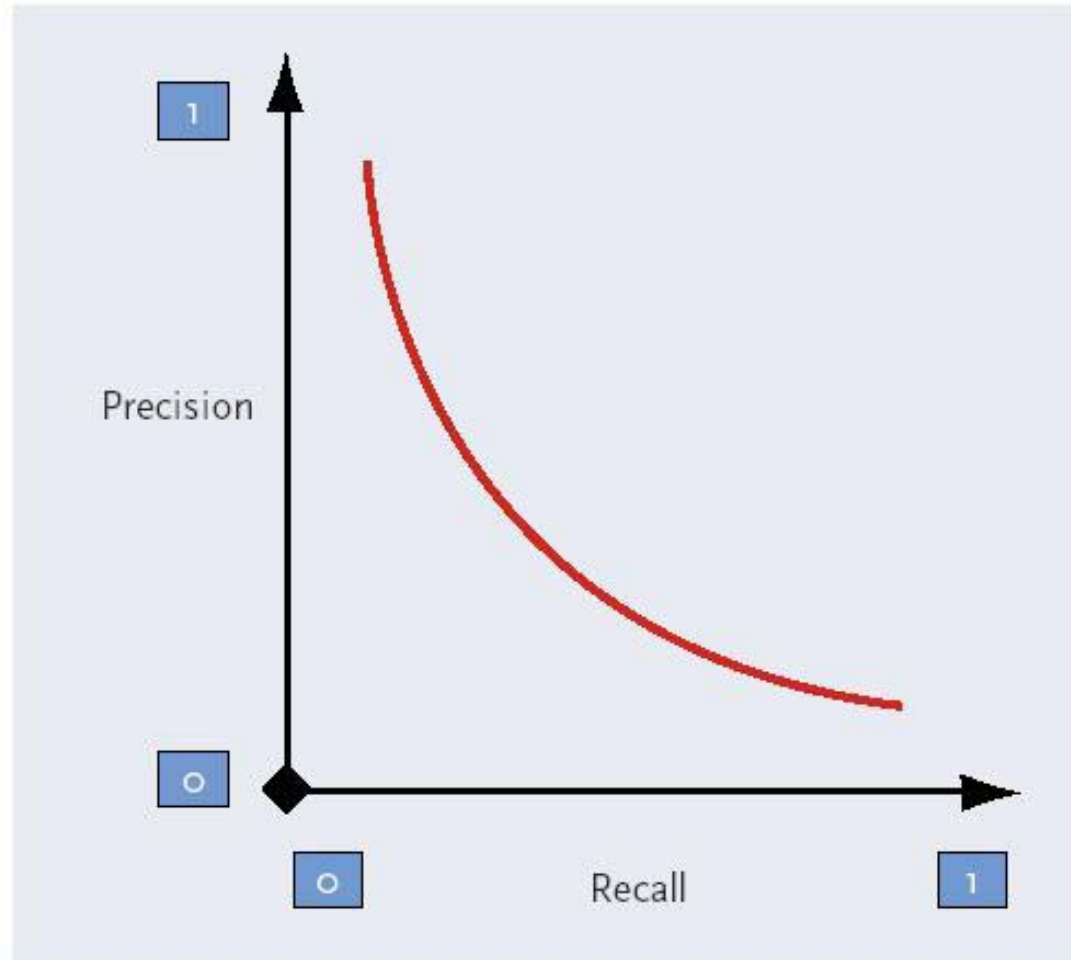
**We don't live in a knowledge economy.
Time and attention are scarce resources.**

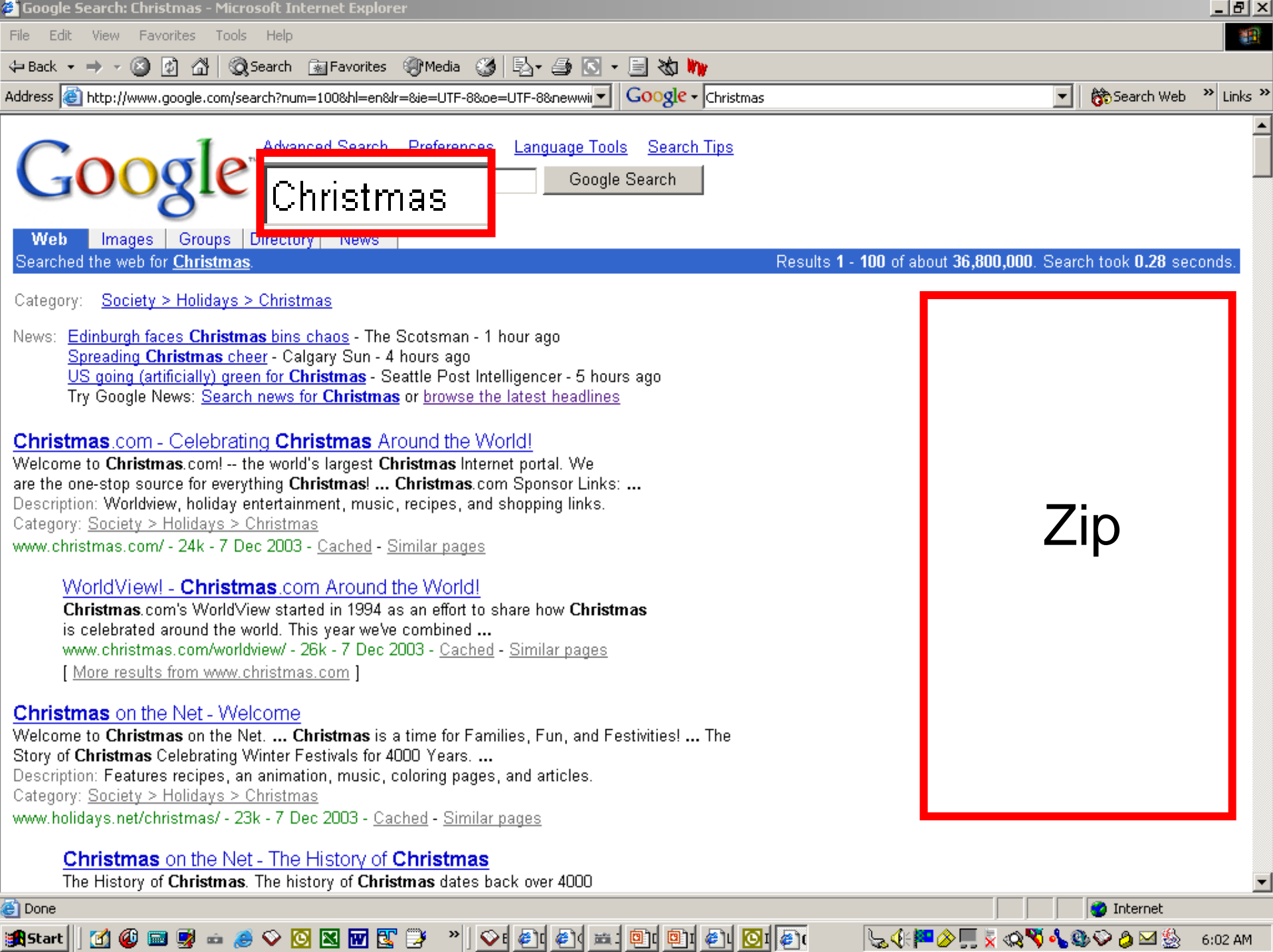


Dilemma of precision and recall

Figure 1:
Precision vs. Recall

As recall increases,
precision drops off





Christmas

Google Search

Web Images Groups Directory News

Searched the web for **Christmas**. Results 1 - 100 of about 36,800,000. Search took 0.28 seconds.

Category: [Society > Holidays > Christmas](#)

News: [Edinburgh faces Christmas bins chaos](#) - The Scotsman - 1 hour ago
[Spreading Christmas cheer](#) - Calgary Sun - 4 hours ago
[US going \(artificially\) green for Christmas](#) - Seattle Post Intelligencer - 5 hours ago
Try Google News: [Search news for Christmas](#) or [browse the latest headlines](#)

[Christmas.com - Celebrating Christmas Around the World!](#)

Welcome to **Christmas.com!** -- the world's largest **Christmas** Internet portal. We are the one-stop source for everything **Christmas!** ... **Christmas.com** Sponsor Links: ...
Description: Worldview, holiday entertainment, music, recipes, and shopping links.
Category: [Society > Holidays > Christmas](#)
[www.christmas.com/](#) - 24k - 7 Dec 2003 - [Cached](#) - [Similar pages](#)

[WorldView! - Christmas.com Around the World!](#)

Christmas.com's WorldView started in 1994 as an effort to share how **Christmas** is celebrated around the world. This year we've combined ...
[www.christmas.com/worldview/](#) - 26k - 7 Dec 2003 - [Cached](#) - [Similar pages](#)
[[More results from www.christmas.com](#)]

[Christmas on the Net - Welcome](#)

Welcome to **Christmas on the Net.** ... **Christmas** is a time for Families, Fun, and Festivities! ... The Story of **Christmas** Celebrating Winter Festivals for 4000 Years. ...
Description: Features recipes, an animation, music, coloring pages, and articles.
Category: [Society > Holidays > Christmas](#)
[www.holidays.net/christmas/](#) - 23k - 7 Dec 2003 - [Cached](#) - [Similar pages](#)

[Christmas on the Net - The History of Christmas](#)

The History of **Christmas.** The history of **Christmas** dates back over 4000

Zip

Text-Mining Tools

- **Convera**



- **Retrievalware v8.0**

- Semantic network,
Dynamic Classification,
Multimedia Search

- **BENS level**

- **Tornado Tech**



- **IRMS v3.0**

- Natural Language
Processing, Guided
Navigation Search

- **CEFIRO level**

飛彈

導航系統

天箭一型

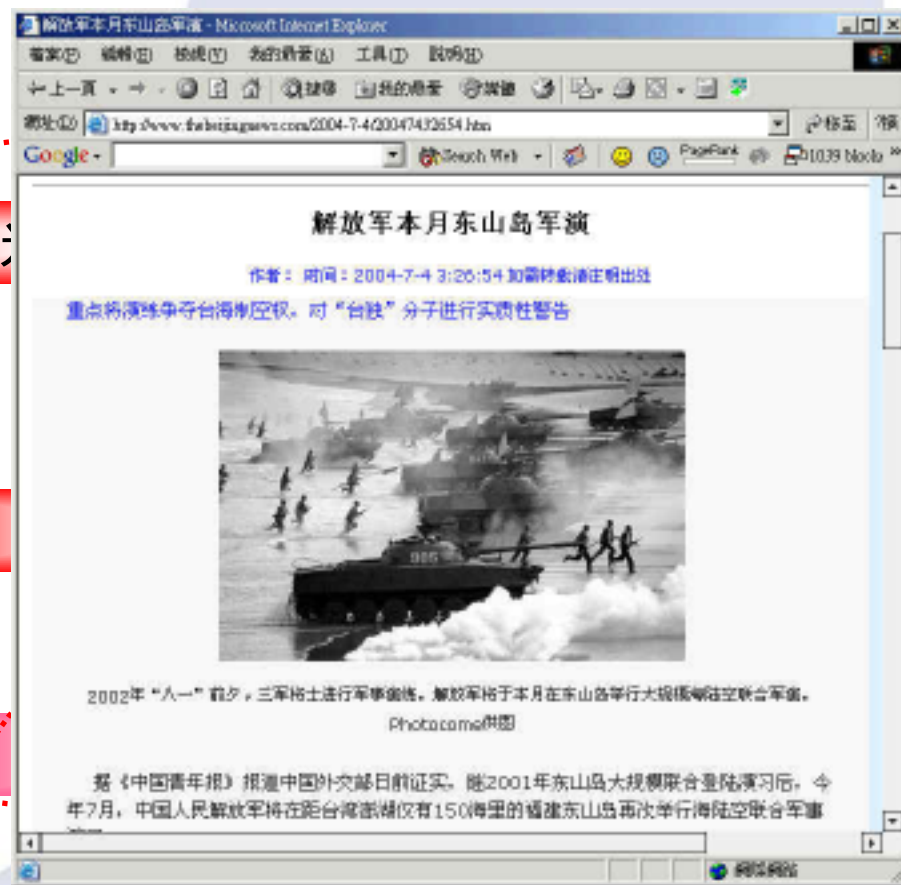
愛國者飛彈

響尾蛇

隱形戰機

試射

漢



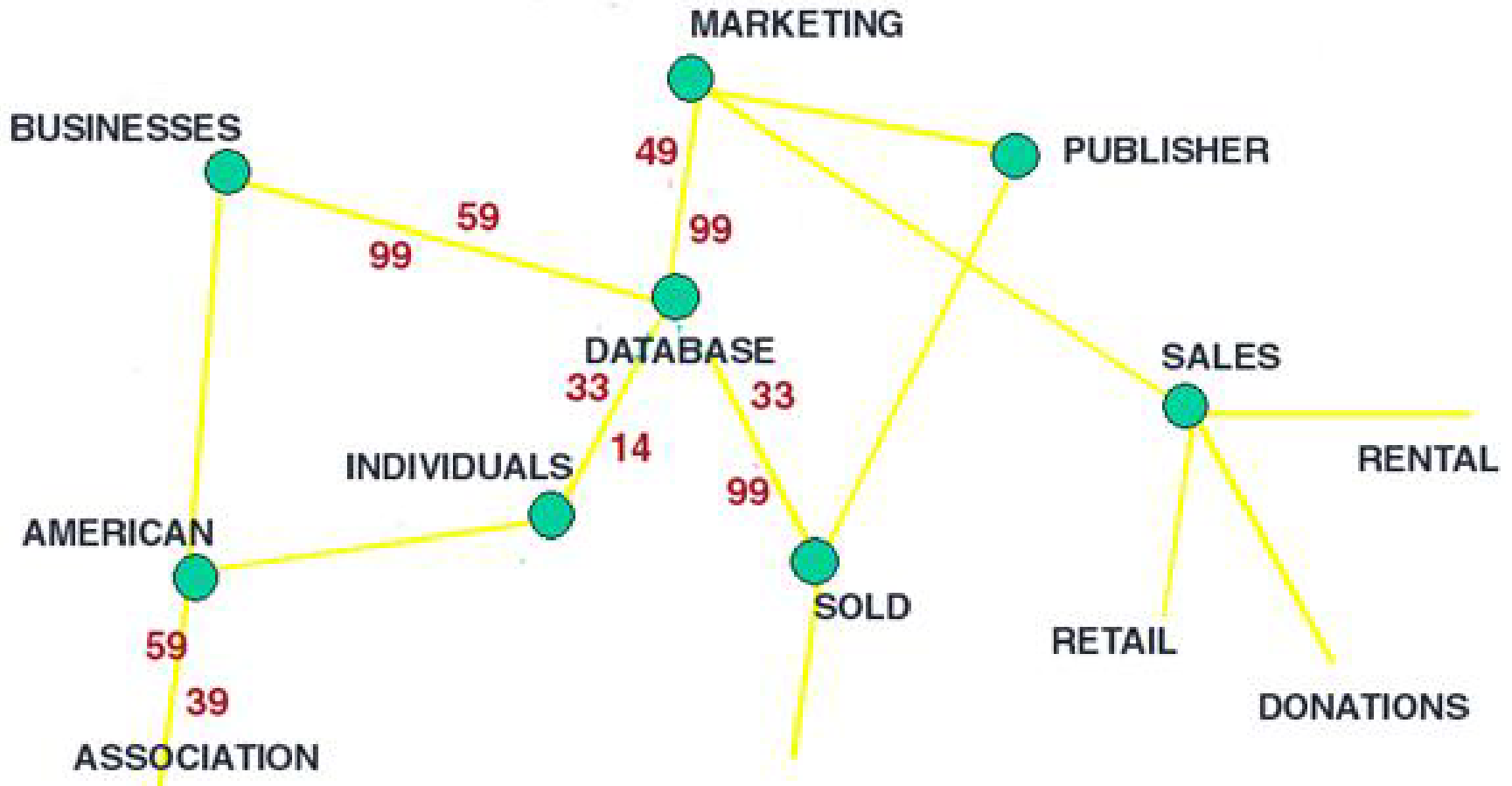
果山島

解放軍

武裝直昇機

中國軍情

Semantic Network



Word Sense Disambiguation

5 senses of information

Sense 1

information, info -- (a message received and understood)

- => message, i
- => commun
- => social
- => relk
- => :

Sense 2

data, **information**

- => collection,
- => group, g

Sense 3

information -- (kn

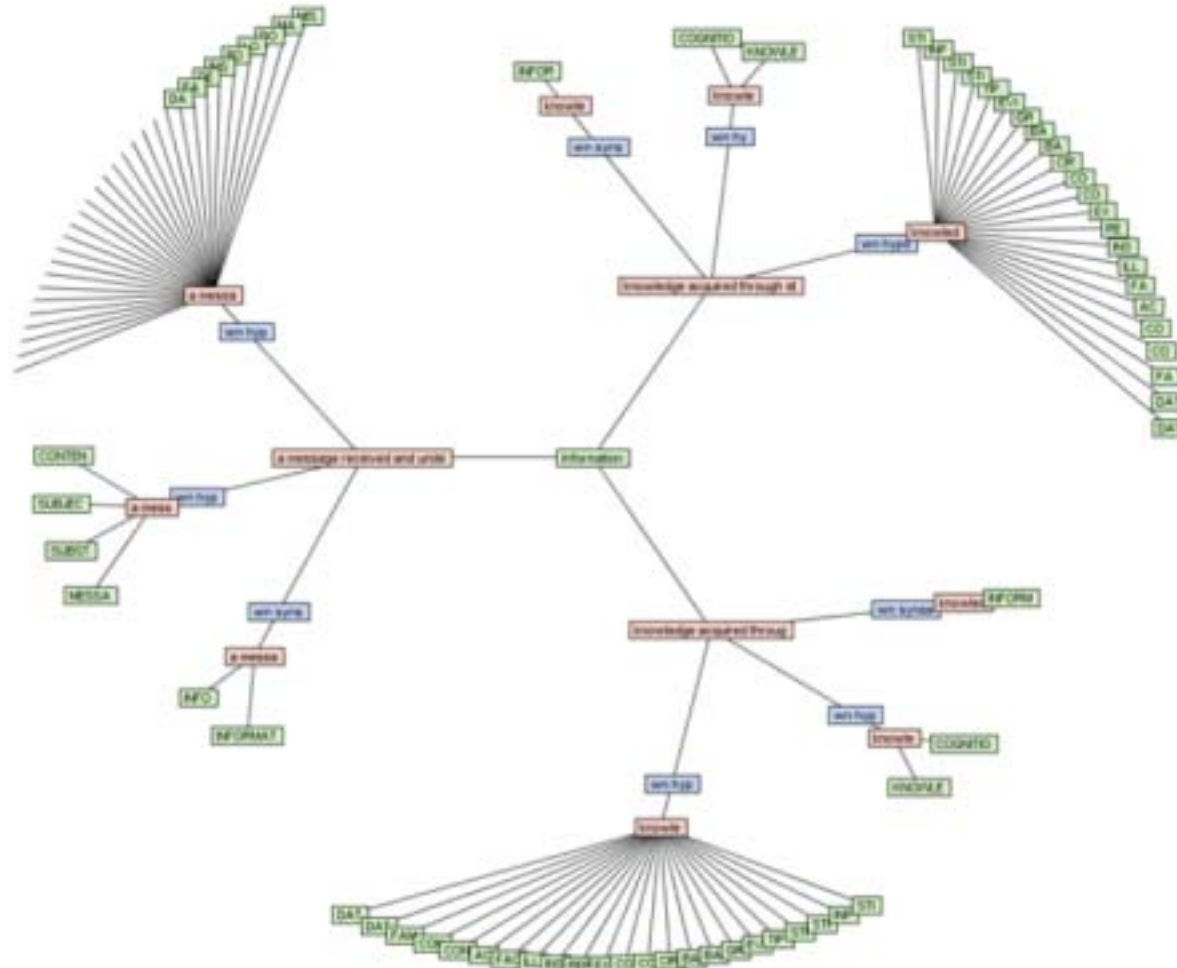
- => cognition, l
- => psychok

Sense 4

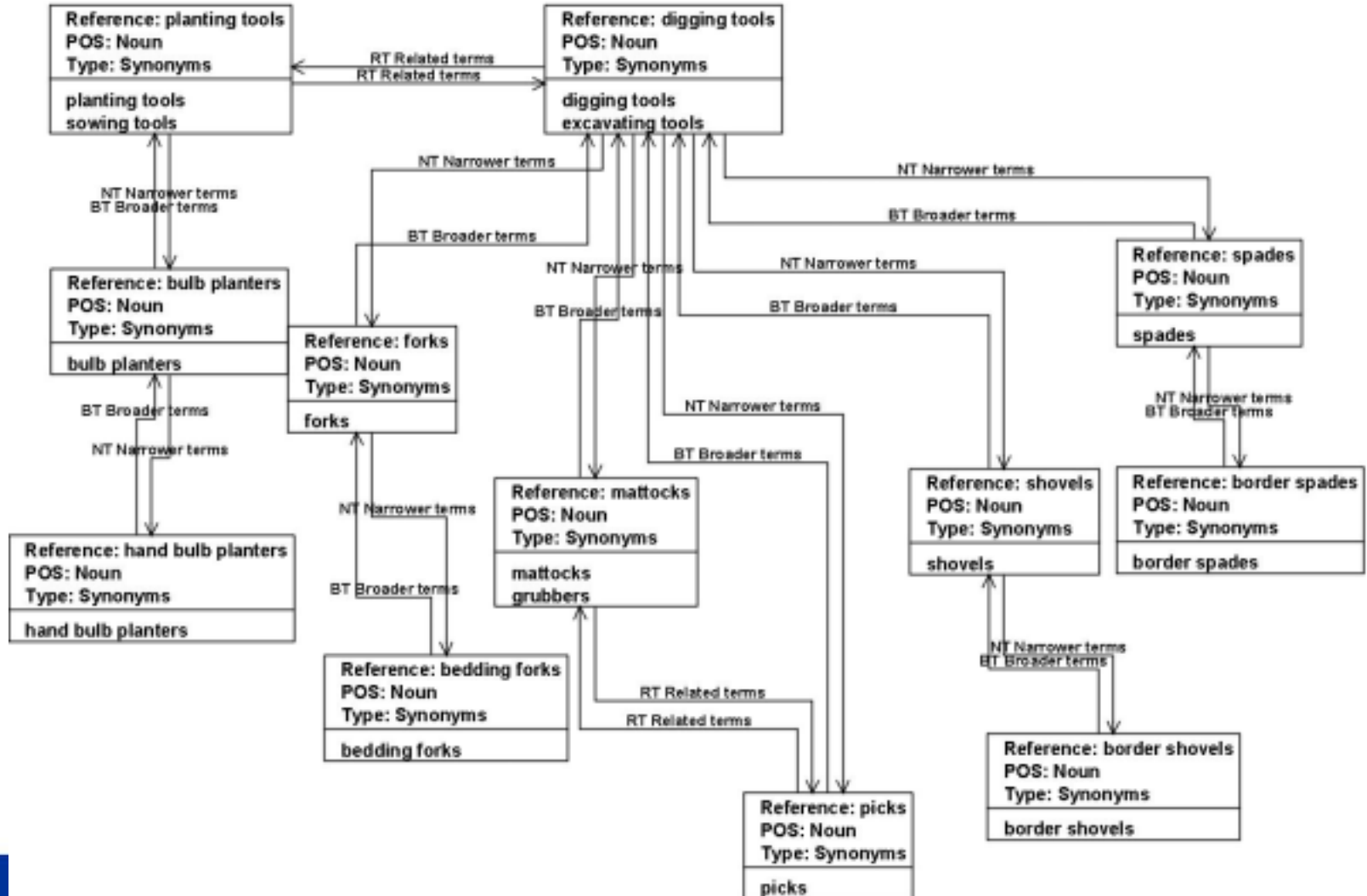
information, sele

"the signal contain

- => informatio
- events)
- => system (
- charact



Term Relationship



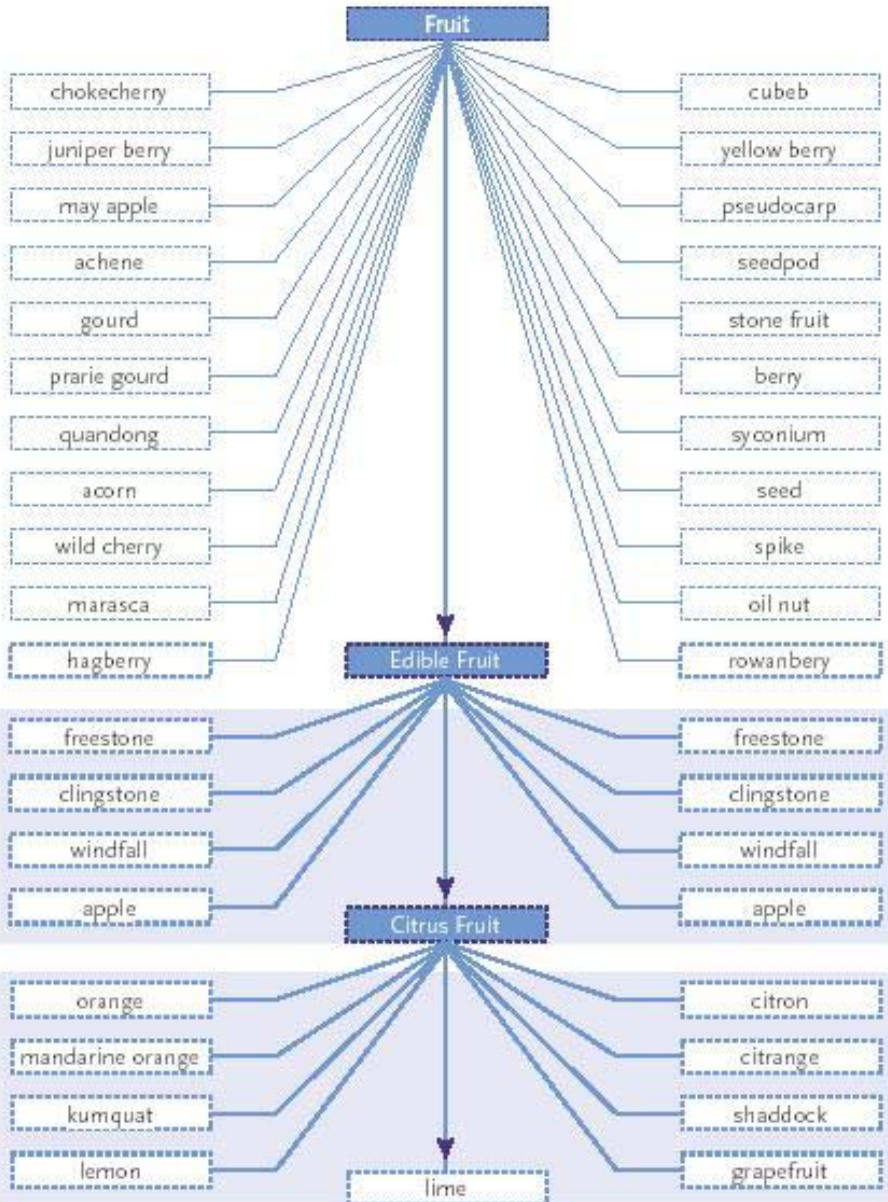


Figure 3. Example of semantic organization of terms for the word "fruit"

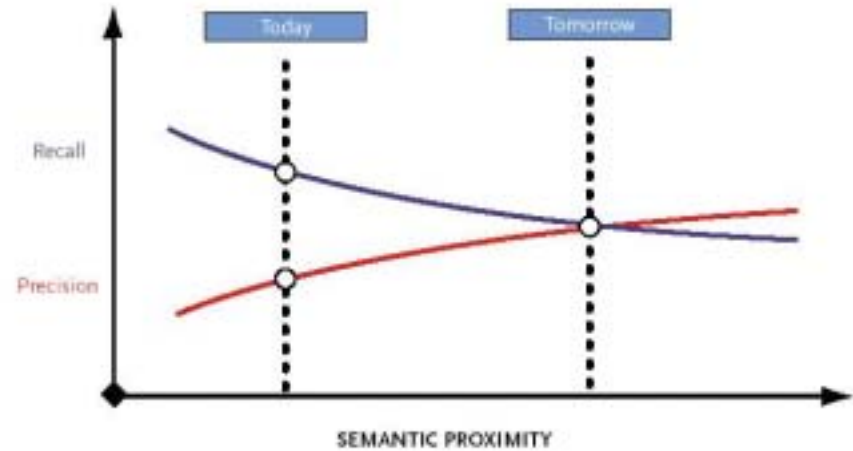


Figure 5. The effect of semantic proximity on recall and precision

Concept Extraction

Benchmark Result

Rank	Title
27	5867087.xml
20	01ad5fea-00a2-c9aa-000b-5f5306536d39.xml
18	01ad6042-00a2-c9aa-000b-5f5307d2a2ec.xml

Display relevant synsets only

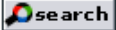
Synset Vector

- pg_tech
 - Oxygen (EN)
 - Oxygen
 - Document body: 46 occurrence(s)
 - Polymers (EN), Elastomers (EN), Polymerides (EN)
 - Polymers
 - Document body: 31 occurrence(s)
 - Chemicals (EN)
 - Chemicals
 - Document body: 21 occurrence(s)
 - Nitrogen (EN)
 - Nitrogen
 - Document body: 3 occurrence(s)
 - Carbon (EN)
 - Carbon
 - Document body: 16 occurrence(s)
 - Hydrogen (EN)
 - Hydrogen
 - Document body: 4 occurrence(s)
 - Silicas (EN), Silicates (EN), Silicon dioxide (EN)
 - Silicas
 - Document body: 7 occurrence(s)
 - Sulfur (EN), Sulphur (EN)
 - Sulfur
 - Document body: 7 occurrence(s)
 - Silicon (EN)
 - Silicon
 - Document body: 8 occurrence(s)
 - Aluminum (EN), Aluminium (EN)
 - Aluminum
 - Document body: 1 occurrence(s)
 - Graphite (EN)
 - Graphite
 - Document body: 2 occurrence(s)

Concept Search



search home :: advanced search :: preferences :: help

CONVERA.

dielectric  new search

Libraries IEEE Search Results

Detail View Results: << 2 of 65 >>

Search Results > Method for increasing DRAM capacitance via use of a roughened surface bottom capacitor plate  
view find similar

Document Hits best hit << 33 >> ::

while leaving regions of said metal layer, on top surface of said **insulator** layer, unreacted;removing regions of unreacted metal layer, from the top surface of said **insulator** layer, while leaving said first metal silicide layer on the surface of said polysilicon storage node electrode;performing a second anneal procedure, to convert said first metal silicide layer to a second metal silicide layer, consuming regions of the top surface of said polysilicon storage node electrode, resulting in a roughened top surface for said polysilicon storage node electrode, directly underlying said second metal silicide layer;selectively removing said second metal silicide layer from the roughened top surface of said polysilicon storage node electrode;forming a capacitor **dielectric** layer on the roughened top surface of said polysilicon storage node electrode; andforming a capacitor plate electrode, on said capacitor **dielectric** layer.2. The method of claim 1, wherein said **insulator** layer is silicon oxide, deposited using LPCVD or PECVD procedures, to a thickness between about 3000 to 7000 Angstroms.3. The method of claim 1, wherein said storage node contact opening is formed in said **insulator** layer, via an anisotropic RIE procedure, using CHF.sub.3 as an etchant.4. The method of claim 1, wherein said polysilicon storage node electrode

log out

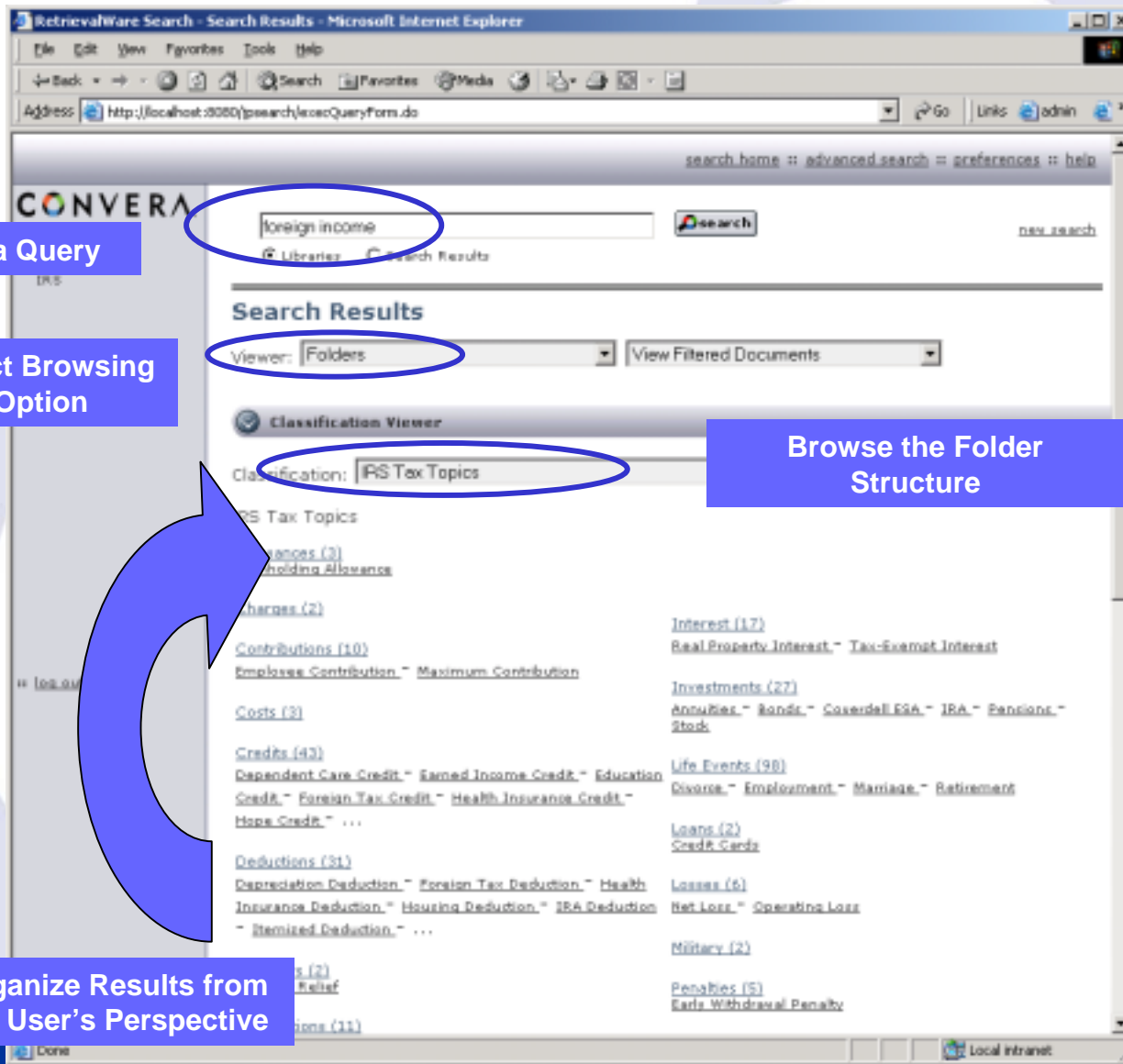
Folder View

Enter a Query

Select Browsing Option

Browse the Folder Structure

Organize Results from the User's Perspective



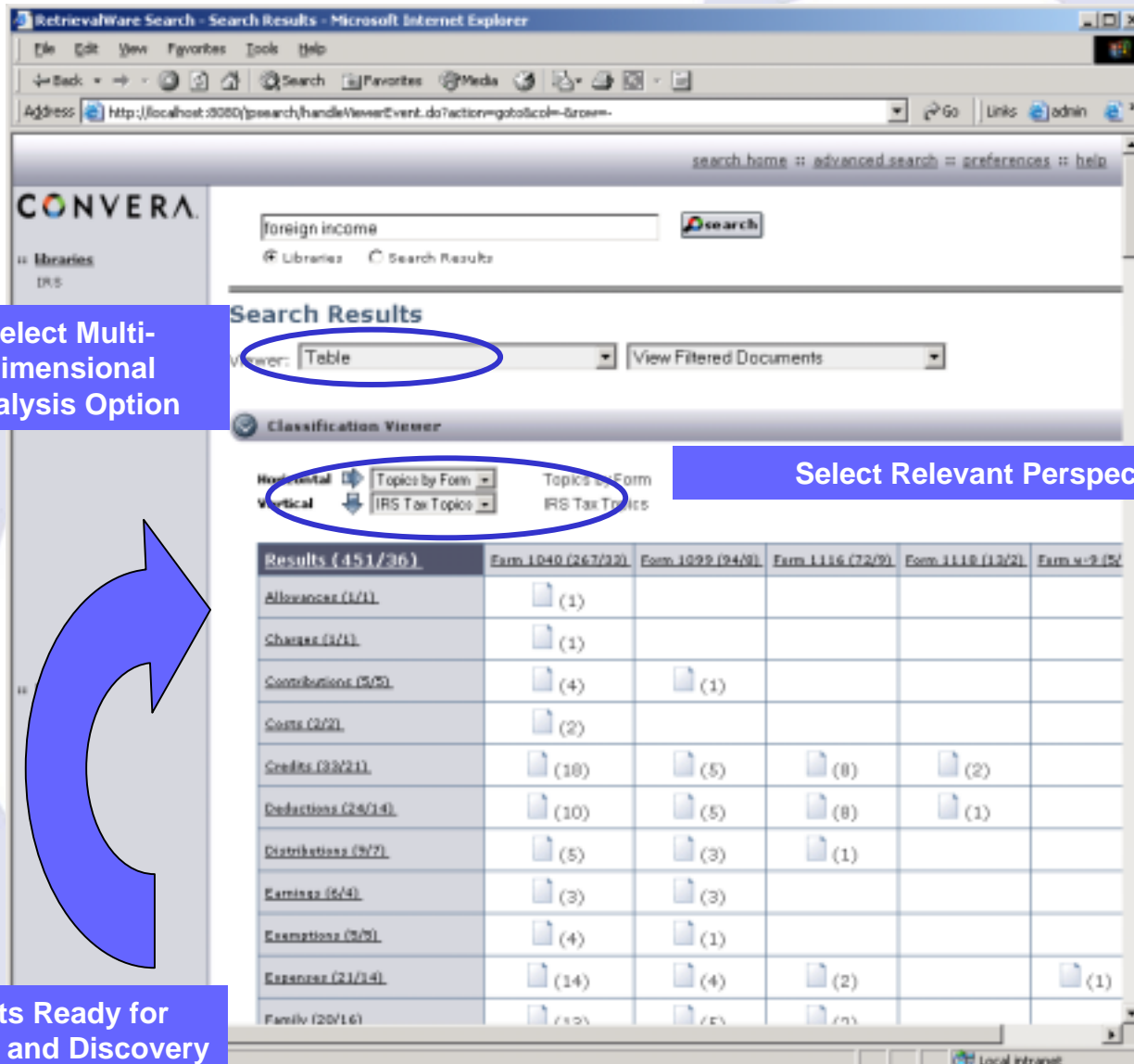
The screenshot shows a web browser window titled "RetrievalWare Search - Search Results - Microsoft Internet Explorer". The address bar shows "http://localhost:8080/search/locQueryForm.do". The search results page has a search bar containing "foreign income" and a "search" button. Below the search bar, there are options for "Libraries" and "Search Results". The "Search Results" section shows a "Viewer" dropdown set to "Folders" and a "View Filtered Documents" button. A "Classification Viewer" section shows a "Classification" dropdown set to "IRS Tax Topics". The main content area displays a list of tax topics, including "Charges (2)", "Contributions (10)", "Costs (3)", "Credits (43)", "Deductions (31)", "Interest (17)", "Investments (27)", "Life Events (98)", "Loans (2)", "Losses (6)", "Military (2)", "Penalties (5)", and "Pensions (11)". A large blue arrow points from the "Organize Results from the User's Perspective" text to the "Classification Viewer" section.

Cross-view Mining

Select Multi-Dimensional Analysis Option

Select Relevant Perspectives

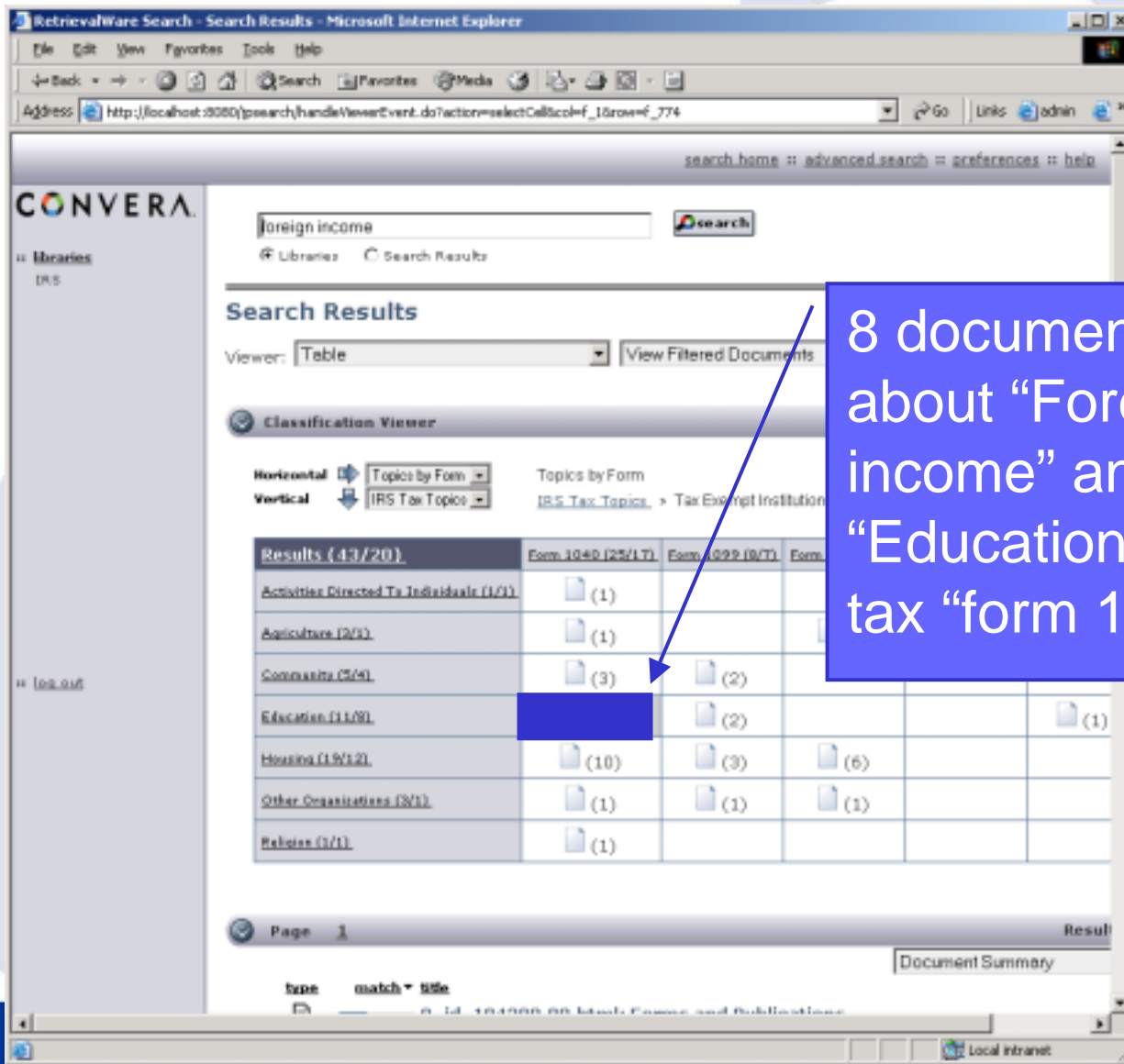
Results Ready for Analysis and Discovery



The screenshot shows a web browser window displaying the RetrievalWare Search interface. The search term "foreign income" is entered in the search box. The "View" dropdown is set to "Table". The "Classification Viewer" section shows "Topics by Form" and "IRS Tax Topics" selected. The main results table is as follows:

Results (451/36)	Form 1040 (267/32)	Form 1099 (94/9)	Form 1196 (72/9)	Form 1118 (13/2)	Form w-9 (15)
Allowances (1/1)	(1)				
Charcos (1/1)	(1)				
Contributions (5/5)	(4)	(1)			
Costs (2/2)	(2)				
Credits (22/21)	(10)	(5)	(8)	(2)	
Deductions (24/14)	(10)	(5)	(8)	(1)	
Distributions (9/7)	(5)	(3)	(1)		
Earnings (6/4)	(3)	(3)			
Exemptions (2/2)	(4)	(1)			
Expenses (21/14)	(14)	(4)	(2)		(1)
Family (20/16)	(10)	(5)	(5)		

Hierarchical Table



RetrievalWare Search - Search Results - Microsoft Internet Explorer

Address: http://localhost:8080/jsearch/handleViewerEvent.do?action=selectCallDoc-f_1&row=f_774

CONVERA

foreign income

Search Results

Viewer: Table

Classification Viewer

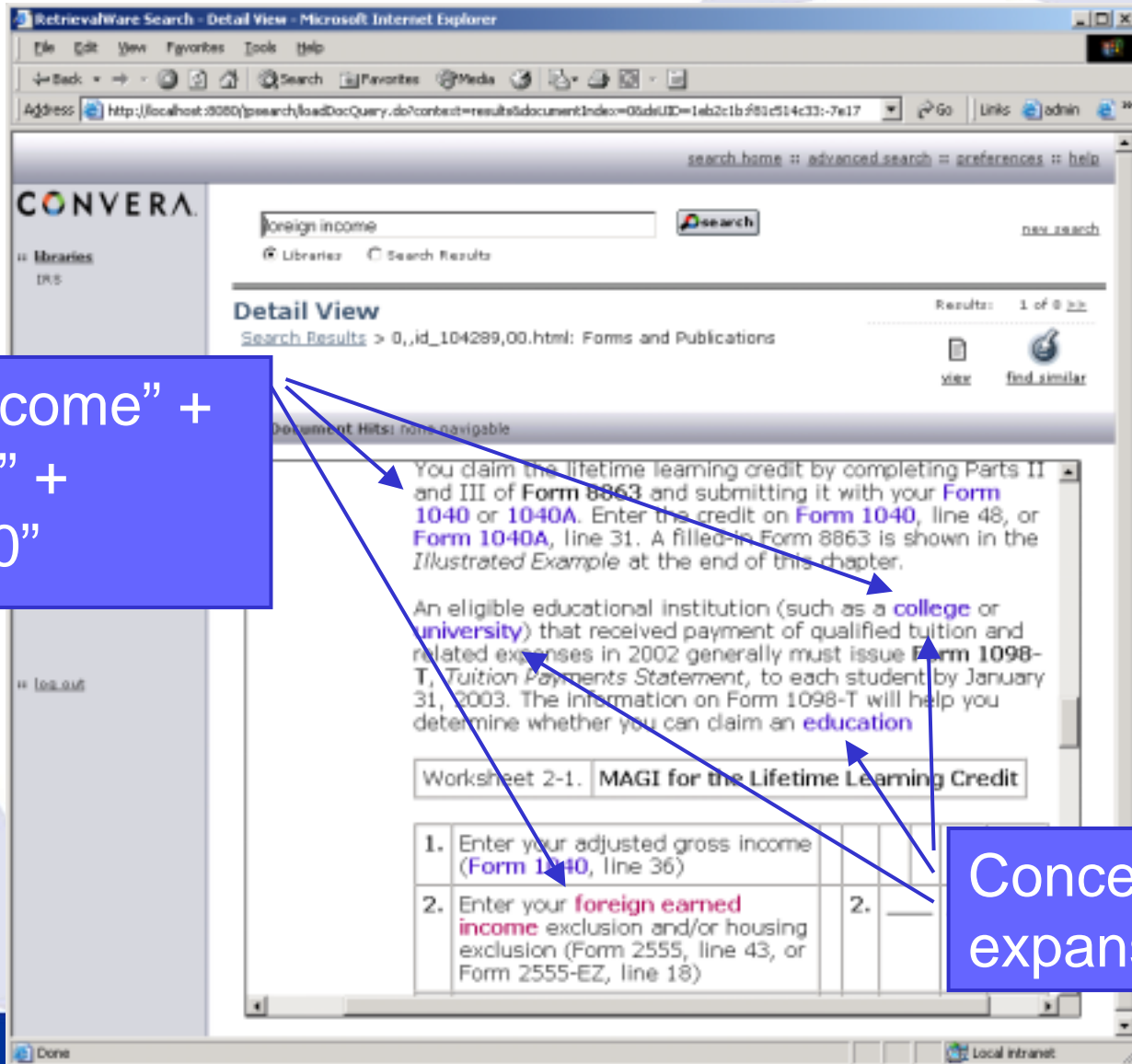
Results (43/20)	Form 1040 (25/17)	Form 999 (8/7)	Form 990 (8/7)
Activities Directed To Individuals (1/1)	(1)		
Agriculture (2/1)	(1)		
Communities (5/4)	(3)	(2)	
Education (11/8)		(2)	(1)
Housing (19/12)	(10)	(3)	(6)
Other Organizations (3/1)	(1)	(1)	(1)
Religion (1/1)	(1)		

Page 1

Document Summary

8 documents about "Foreign income" and "Education" and tax "form 1040"

Pinpoint Accuracy



RetrievalWare Search - Detail View - Microsoft Internet Explorer

Address: <http://localhost:3080/psearch/loadDocQuery.do?context=results&documentIndex=0&docUID=1ab2c1b4981c514c33-7e17>

CONVERA

foreign income

Detail View

Search Results > 0, id_104289,00.html: Forms and Publications

Results: 1 of 0 hits

Document Hits: none navigable

You claim the lifetime learning credit by completing Parts II and III of **Form 8863** and submitting it with your **Form 1040** or **1040A**. Enter the credit on **Form 1040**, line 48, or **Form 1040A**, line 31. A filled-in Form 8863 is shown in the *Illustrated Example* at the end of this chapter.

An eligible educational institution (such as a **college** or **university**) that received payment of qualified tuition and related expenses in 2002 generally must issue **Form 1098-T**, *Tuition Payments Statement*, to each student by January 31, 2003. The information on Form 1098-T will help you determine whether you can claim an **education**

Worksheet 2-1. **MAGI for the Lifetime Learning Credit**

1.	Enter your adjusted gross income (Form 1040 , line 36)	
2.	Enter your foreign earned income exclusion and/or housing exclusion (Form 2555, line 43, or Form 2555-EZ, line 18)	2.

“Foreign income” +
“Education” +
“Form 1040”

Concept
expansion

Ontologies

• Comprehensive Results

– A query on “Britney Spears” in “Palm Desert” returns:

- Britney Spears’ Bio
- Britney Spears’ Fan Clubs
- Britney Spears’ Concerts
- Britney Spears’ Fragrance, etc.
- Etc.

News

Meteo: 26 c° sunny

Mayor election traffic info

Weekend Escapes Getaway Deals Weekly Specials

Events Attractions

Restaurants & Bars

Best Restaurants Best Bars Lounges Chinese Food

Hotels

All Hotels Discounts Hotels Top Hotels

Yellow Pages

Groceries Hospitals School Car repair

Spa & Beauty

Hair Salons Day Spas Health Clubs

Movies

Theaters Showtimes Now Playing View latest trailers

Careers

Find Jobs Post a Resume

Best Restaurants Best Bars Barbecue Lounges Chinese Food

britney spears

Hot News: On saturday, January 3rd, Britney Spears and a friend took a joke too far by getting married. Britney and Mr.Alexander have filed for annulment which will become official on monday, January 5th. [The Full story ...](#)

Listen to her new CD: *In The Zone*
Scandal Britney and Madonna: [view video](#)

Results [top 50 results](#) [other cities](#) [Top 50 research](#)

Search Results for "britney spears" Results 0 of 0

All [a](#) [b](#) [c](#) [d](#) [e](#) [f](#) [g](#) [h](#) [i](#) [j](#) [k](#) [l](#) [m](#) [n](#) [o](#) [p](#) [q](#) [r](#) [s](#) [t](#) [u](#) [v](#) [w](#) [x](#) [y](#) [z](#) [Click to sort by: Distance](#)

We apologize but we didn't found any results for "britney spears" at Palm Spring.

Refine Your Search

for "Britney Spears":

- PopStar
- Music
- Concerts

[Explore similar artists](#)

See results for following cities

- Las Vegas --book your Concert [03/06](#) [04/06](#) [05/06](#)
- Riverside --Interview
- San Diego --holidays
- Los Angeles --Concert view

Customers who searched for "Britney Spears" also looked for:

Madonna -- [britney's Kiss.avi](#)
Britney -- ["In the Zone" album](#)
Christina Agullera -- [news](#)

Results 0 of 0

Certain business data provided by infoUSA.com. Copyright 2003. POWERED BY CONVERA.

Hot news for "britney spears"

- Last Boyfriend -- pictures
- Divorce record -- video
- Tv interview with Madonna

[View archives](#)

MUSIC Download free sample

Watch britney in concert on your computer. Now Download the britney's famous songs and videos [HERE](#)

DOWNLOADS
MUSIC

Meet your soulmate

Meet britney's fan faster and easier. Enter the Fan club [HERE](#). The Internet's top full service singles and dating site!

Enter chat as: [Male](#) [Female](#)

Concert Britney Spear

Britney concert list: - 03/feb San Diego
- 03/jun Las Vegas

Follow Britney Spears world tour: ticket for NY/Las Vegas

Travel follow Britney

See all the britney's destination, and hotels [HERE](#)

Shopping

- Britney Spears's perfume
- Change your style with the new collection.

Cosmetic Jewellery
Clothes Gifts

Customer profiling enables profile driven query expansion
"Give users what they want".

Yellow Pages

Enter Zip code

Localization of the subject
How to contact a kind of actor

People search . reverse lookup . yellow travel

Weather

Select your state

- West / East
- Rest of the World
- Natural disaster prediction

- California
- Colorado
- Connecticut
- Delaware
- Florida
- Georgia

Experts

- The experts list
- The expert opinion
- "expert" 's research work

expert photo

Geographical map


Zip code location

Map

Relative leisure
Relative pictures
Policy situations

Bibliography

About J.K. Rowling :



- Press articles
- Harry Potter encyclopedias
- J. K. Rowling other books


Your City

Enter city

- City famous place
- Night life
- Cultural

Restaurants . Bar . NightClub . Museum . Social

Timeline




2000 2001 2002 2003 2004

Previous Files - Forecast - Refresh

Individual

George W. Bush biographical facts:

- political
- professional
- education
- personal



The discusses about him

Community

Websites . meetings . files


Collectormania 5 will take place from friday 30th april to monday 3rd may 2004 in Milton Keynes, England

Fan club presentation

Event

Calendar . photo/video . files .

- Attend a party for Bush
- Important dates
- Fubar program
- Be a volunteer



Gossip

Fresh news

-
-
-
-
-

Tendency
Mode -- Shopping

Picture

Your Life


Horoscopes . Love . Tips . Health . Studies

- Ediet news:
- Fitness
- Define your personality
- Studies orientation

picture / Pub

Teaser

News . Press links . Users critics . Downloads




Picture/video

- Product description
- Official links
- Launching campaign

Entertainment

TV . Games . Sports . Downloads

Quidditch Video Game:



- The comics
- Harry Potter roleplay
- Puzzles

Stocks

Actu . Top active society . files . refresh

Dow	10,270.59	↓ 29.71
NASDAQ	1,966.91	↓ 9.85
S&P	1,120.35	↓ 3.40

Dow Jones 10276.59 -0.23%

DOW JONES 15/10-16/03



forecasts
recommendations
indicators

Product

Low prices . retailers . Users also looked for ...

Summary: *In the light of Lord Voldemort's return, we are only as strong as we are united, as weak as we are...*



- DvD / CD
- Books from same author
- Video Games
- Toys
- Collectibles

Business

Stock exchange . Shares . Mortgage . Broker .

- General statistics (Turnover 2003 ...)
- Sector information
- Associates, Group
- Market evolution
- Fubar events

Logo

News

Online newspaper . Sources . Video

Title 1
Title 2
Title 3
Title 4

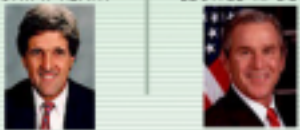
Picture

Comparative table

stats . graph . refresh

Actual statement of the applicants:

DEMOCRATIC JOHN F. KERRY	REPUBLICAN GEORGE W. BUSH
-----------------------------	------------------------------



Only 225 Days Until Election Day 02/02 2004!!

Career

DELL CAREERS AT DELL
CALL IT OPPORTUNITY

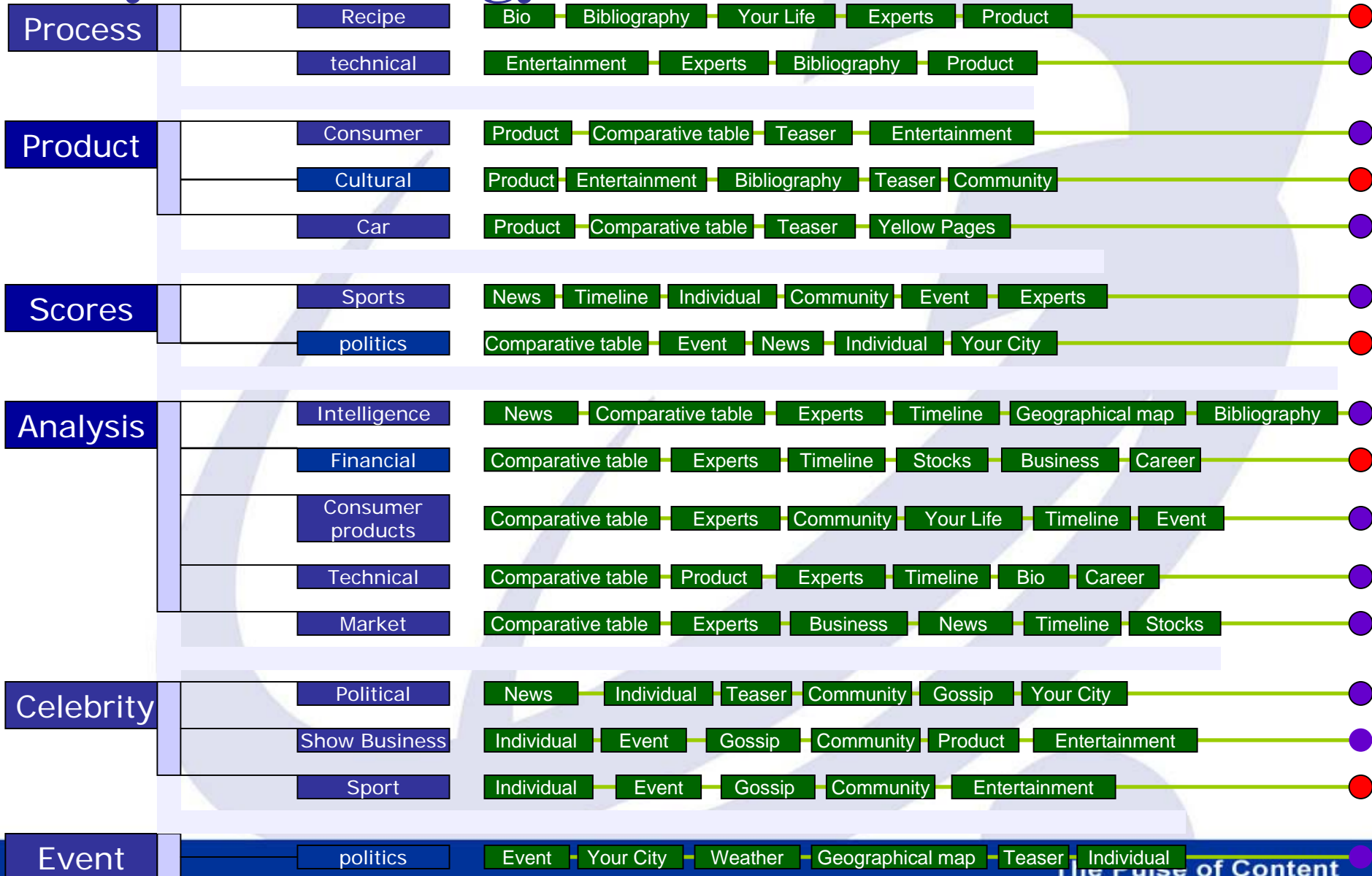
- Search our Hot Jobs!
- Explore new opportunities.
- Build your profile and let people search for you.

Bio

- Recent discovery
- Health
- Subject description --
- Subject analysis link

picture

Layout Ontology



Menu

- Latest news

- Irac
- elections
- world
- video

+ Yellow pages

Going Places

- Air Tickets
- City Guides
- Hotel Deals
- Local Traffic
- Maps & goals

Hot Deals

- Auctions
- Barnes & Noble
- Dell Deals
- Enter Hsn.com
- 10% Off cd

Living

- Buy a House
- Find a Job
- Fitness
- Get a Date
- Rent a house

News & Opinion

- Business
- Election Guide
- Video
- Sports Scores
- Weather

Monday 15 of March 2004

Search for



Search Results for **harry phoenix** results **10** of **103.042**

All **a b c d e f g h i j k l m n o p q r s t u v w x y z** **next 10**

Sort by Date / Distance / Rate

Harry Potter : The Official Web Site **10**
www.harrypotter.com/ - 44k

The Harry Potter Companion **10**
Description: The latest movie, the next books ...
Category: Arts > Litterature > ... > Harry Potter Series > News
www.factmonster.com/spot/harrypage1.html - 34k

Movies: Harry Potter and the Order of the Phoenix **10**
Description: Order of the Phoenix (2007). News and rumors...
Category: Arts > Movies > Titles > H > Harry Potter Series
[movies.yahana.com/ shop?d=hp&cf=prev&id=1808475611](http://movies.yahana.com/shop?d=hp&cf=prev&id=1808475611) - 37k

Time for Kids | Specials | HARRY POTTER **9**
Description: A Hogwarts Challenge and stories behind the stars
Catégorie: Kids and Teens > School Time > Series > Harry Potter
www.timeforkids.com/TFK/potter - 26k

Book: Harry Potter and the Order of the Phoenix **9**

Product

Low prices . retailers . Users also looked for ...

. Summery: *In the light of Lord Voldemort's return, we are only as strong as we are united, as weak as we are...*



- . DvD / CD
- . Books from same author
- . Video Games
- . Toys
- . Collectibles

Entertainment

TV . Games . Sports . Downloads

. Quidditch Video Game:



- . The comics
- . Harry Potter roleplay
- . Puzzles

Bibliography

- About J.K Rowling :



- . Press articles
- . Harry Potter encyclopedias
- . J. K. Rowling other books

Art

- . Mary GrandPré illustrations gallery
- . The Order of the Phoenix screensavers
- . Fan art websites links

Menu

Latest news

- Irac
- elections
- world
- video

+ Yellow pages

Going Places

- Air Tickets
- City Guides
- Hotel Deals
- Local Traffic
- Maps & goals

Hot Deals

- Auctions
- Barnes & Noble
- Dell Deals
- Enter Hsn.com
- 10% Off cd

Living

- Buy a House
- Find a Job
- Fitness
- Get a Date
- Rent a house

News & Opinion

- Business
- Election Guide
- Video
- Sports Scores
- Weather

Monday 15 of March 2004

Search for tiger woods

Search



Search Results for tiger hood

results 10 of 103.042

All a b c d e f g h i j k l m n o p q r s t u v w x y z next 10

Sort by Date / Distance / Rate

Tiger Woods: The Official Web Site 10
www.tigerwoods.com/ - 99k

Unofficial Tiger Woods Home Page 10
Description: FAQ, anecdotes and quotes, mailing list, and links.
Catégorie: Sports > Golf > Golfers > Woods, Tiger
world.std.com/~rgu/tigerwoods/ - 3k

PGATOUR.COM presents -- Bio, Stats, and Results 10
Description: Current statistics or tour history.
Catégorie: Sports > Golf > Golfers > Woods, Tiger
www.pgatour.com/players/intro/8793.html - 40k -

Tiger Woods Timeline 9
Description: A potted life history presented as a year timeline.
Catégorie: Sports > Golf > Golfers > Woods, Tiger
www.infoplease.com/spot/tigertime1.html - 33k

Result Page 1.2.3.4.5.6.7.8.9.10...

next 10

Search for

Search

Individual

-Forename: Eldrick (Tiger)
-Surname: Woods
-DOB: 30-Dec-1975
-Height: 6'2
-Weight: 185



.Tiger Woods biography
.Tiger Woods opinions

Event

Calendar . photo&video . files .

.PONTE VEDRA BEACH, Fla. -
Saturday is moving day on the PGA
.Woods still posted a 4-under-par 68.

.Futur championships

Gossip

Fresh news:

- Did you know ?
- A 30 million dollars career
- Tiger love story
- The secret photos



Community

Websites . meetings . files

.Enter the official ClubTiger
.Email Tiger
.Tiger's response
.TW foundation



Entertainment

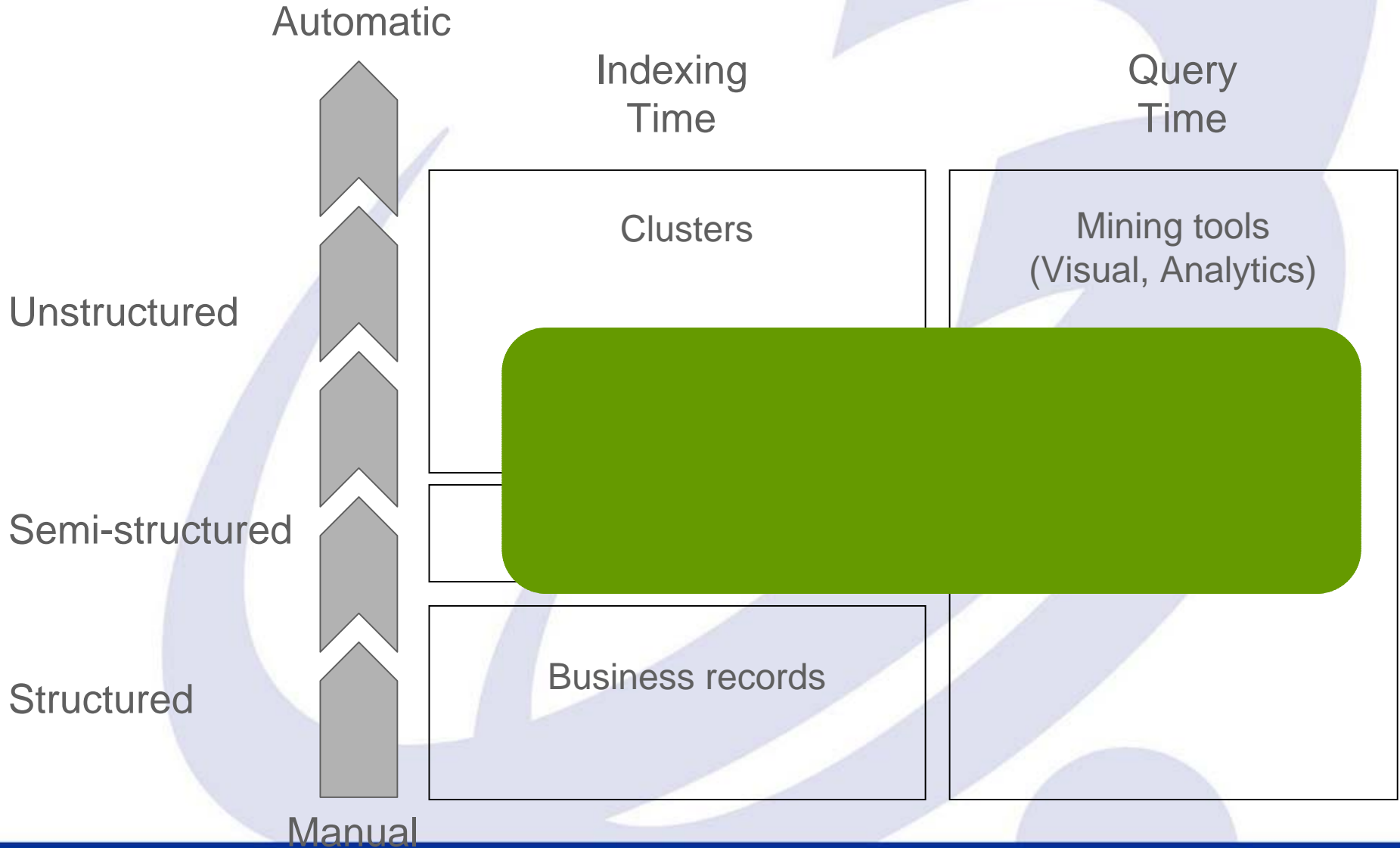
TV . Games . Sports . Downloads

Video Game:
. TigerWoods PGA Tour
By Electronic Arts

.Tiger Store:
-Golf stuff
-Happarel



Components Of The Decision Model



Best Practices

- **Ontology = Templates**
 - Data fusion
 - Parametric search
 - Guided search
- **Taxonomy = Gold standard**
 - Indexing
- **Classification = Solution**
 - Business unit portal
- **Terminology = Controlled vocabulary**
 - Vertical vocabularies
 - Multilingual collaboration

Categorization

Defense
Ordnance > Missiles > Munitions
Ammunition (12) Bombs (22)
Mines (17) Warheads (18)

Cross-lingual

Multimedia

TimeCode: 01:32:18:04
Score: 92%

09:45:28;13 OF THIS CONCERN, INTERNATIONAL
09:45:29;01 INTELLIGENCE AGENCIES ARE
09:45:30;22 COOPERATING WITH EACH OTHER.
09:45:33;06 IN PARTICULAR, THE RECENT
09:45:33;24 CONCERN OVER COMMERCIAL
09:45:36;08 VEHICLES LOADED WITH EXPLOSIVES
09:45:38;16 HAS GENERATED INTENSE SCRUTINY
09:45:38;27 AT BORDER CROSSINGS AND EMBASSY
09:45:42;09 FACILITIES. TRUCK BOMBING HAS
09:45:44;20 INCREASED IN FREQUENCY AND
09:45:47;12 AUTHORITIES ARE USING SOPHISTICATED
09:45:50;16 DEVICES TO MONITOR, DETECT AND
09:45:52;27 TRACK SUSPECT VEHICLES. NEW
09:45:53;28 POLICIES ARE BEING DEVELOPED

- Visual Search by Color, Shape Texture...
- Ranked Visual Hits
- Customizable Scoring
- Query by Example



Summary

- **Open box vs. Black box**
- **Manual definition vs. machine learning**
- **Customer + User + IT = Sustainable competitive advantage**

Q&A

龍捲風科技執行長
趙國仁



龍捲風科技
TORNADO TECH