

"The dreaded bugbear of transfer seasons"

Steve Papa Founder and CEO ICIC, October 2007

# How are these different?







# How are these different?







# RDBMS architecture vs. new class of database







How much would an iPod Nano have cost in the 1970s?





Structured vs. unstructured data in the 1970s

- Search & the inverted index
  - **Utilized** Distribution Germany 4% India 14% Gol China 13% USA 69% output pattern for Attributes document 5 Schema 0.0.0 StudentID DOB Name Phone aardvark bat Input Fattern keywords for 111335555 Matt 555-4141 06/03/70 COM document 5 are dog 111224444 556-9123 01/02/76 Troy bat, elephant Tuple -> elephant a goldfish fox 999775555 Sean 876-5150 10/31/81 goldfish in 111 m 444668888 Christy 219-7734 02/14/84 .....
- BI and the relational table



# Storage is linked to access

### Transfer Last Year's Correspondence in ten minutes by the Safe Guard System

The Safe Guard System provides for the care of miscellaneous papers so that they are as easily found when wanted as the more important papers which are so conspicuously indexed that they cannot be overlooked.







# Inside of ERP: 15,000 tables





# One size fits all: an idea whose time has come and gone

### "One Size Fits All": An Idea Whose Time Has Come and Gone

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Michael Stonebraker Computer Science and Artificial Intelligence Laboratory, M.I.T., and StreamBase Systems, Inc. stonebraker@csail.mit.edu

"The last 25 years of commercial DBMS can be summed up by a single phrase: "One size fits all." ... In this paper, we argue that this concept is no longer applicable..."

Inappendent addapage engines, sente et anten ma

unified by a common front and narrow We use

Uğur Çetintemel Department of Computer Science Brown University, and StreamBase Systems, Inc. ugur@cs.brown.edu

of multiple code lines causes various practical problems, including:

- a cost problem, because maintenance costs increase at least linearly with the number of code lines;
- a compatibility problem, because all applications have to run against every code line;
- a sales problem, because salespeople get confused about which product to try to sell to a customer; and
- a marketing problem, because multiple code lines need to be positioned correctly in the marketplace.

To avoid these problems, all the major DBMS vendors have followed the adage "put all wood behind one



# How are these different?

- When did the patent on Claritin expire?
- Who authored articles in *Nature* last month?
- What is the average depth of our deep sea wells?
- How can we increase licenses on our IP portfolio?
- Who should I recruit for my lab?
- Where should we drill our next deep sea well?



# Process software vs. people

- When did the patent on Claritin expire?
- Who authored articles in *Nature* last month?
- What is the average depth of our deep sea wells?
- How can we increase licenses on our IP portfolio?
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- Where should we drill our next deep sea well?







# New kinds of databases emerging

- Flexible schemas for a world in flux
- Cross application silos (HR, CRM, file servers)
- Interactive dialog supports investigations
- Arbitrary filters and searches
- Summarize results with charts, faceted navigation, etc.



IBM Human Capital Management

- Saved \$500mm in one year (as reported to WSJ)
- Active seat count ~4000 untrained users





ENDEO PROJECT P Project type: Any   Fixed	This Professional Se system for optimizin unique index can gra a resume CMS, con application, and EF which a broad set of navigate availability, reflect a summarization	ervices Management Portal is a un g decisions across all relevant crit ab data from a variety of systems - mpetencies database, project m RP system – and synthesize a sin f users can easily see tradeoffs an Here we show all consultants an tion of their characteristics.	hifying support eria. Endeca's – in this demo anagement gle view from d successfully d the menus	IL PAGE UTILIZATION BENCH CALL
Click on "add to project" next to the consultants below to staff this project. PROVEN CONSULTANTS HANZL, HOLLIS		Availability Now (478), Within 2 weeks (579), Within <u>4 weeks</u> (739), More than 4 weeks (1696) <u>Custom</u> Bill Rate <u>0 to 100</u> (627), <u>100 to 200</u> (789), <u>200</u> <u>to 300</u> (401), <u>300 to 400</u> (423), <u>400 to</u> <u>500</u> (195) <u>Custom</u>	Level Management Analyst (502), Senior Management Analyst (342), Consultant (716), <u>Senior Consultant</u> (517), <u>Manager</u> (263), <u>Senior Manager</u> (95) International Experience United States (2376), Japan (253), <u>Netherlands</u> (188), <u>More</u>	Country <u>USA</u> (1466), <u>China</u> (358), <u>India</u> (346), <u>More</u> Software Application Experience <u>Vignette</u> (762), <u>Cognos</u> (760), <u>IBM - BI</u> (703), <u>More</u> Performance Rating 1 (461) 2 (550) 3 (853) 4 (363) 5
Senior Consultant \$366.00 <u>MAULTASCH, DELMER</u> Manager \$123.00 <u>SCHILDGEN, LACY</u> Manager \$436.00		Industry Experience Manufacturing (2038), <u>Finance and</u> Insurance (1567), <u>Apparel</u> Manufacturing (346), <u>More</u> Accounts Intel Corporation (127), <u>Scientific-</u> Atlanta, Inc. (125), <u>Goldman Sachs</u> <u>Group, Inc.</u> (76), <u>More</u>	<i>Practice Vertical</i> <u>Electronics Software</u> (754), <u>Automotive</u> (210), <u>Aerospace &amp; Defense</u> (125), <u>More</u>	(198) Functional Experience Integration Services (1951), Infrastructure Solutions (1689), <u>CRM</u> Solutions (1597), <u>More</u>

Consultant Listing RESULTS 1 - 25 OF 2435							
Sort Ruy Default	~		Specify Location	77.4			
Consultant Name	A <mark>vailable</mark>	Location	Level	Bill Rate			
1 <u>Hanzl, Hollis (rese</u>	<u>rve)</u> J <mark>u</mark> l 10, 2006	Dayton, Ohio	Senior Consultant	\$366.0			
2 <u>Schildgen, Lacy (r</u>	<u>eserve)</u> C <mark>ct 10, 2005</mark>	Geneva, Switzerland	Manager	\$436.0			
3 <u>Whitehall, Narcisa</u>	<u>(reserve)</u> Nov 6, 2006	Atlanta/Shared Services, Georgia	Senior Management Analyst	\$173.0			
4 <u>Madrazo, Jonathon</u>	( <u>reserve)</u> Jan 1, 2007	Annapolis, Maryland	Management Analyst	\$143.0			
5 <u>Whiteaker, Nyla (r</u>	<u>eserve)</u> C <mark>ct 9, 2006</mark>	Dahlgren, Virginia	Consultant	\$296.0			
6 <u>Puleo, Criselda (re</u>	<u>serve)</u> A <mark>ug 28, 2006</mark>	Stuttgart, Germany	Senior Management Analyst	\$173.0			
7 <u>Maultasch, Delme</u>	<u>r (reserve)</u> Feb 2, 2004	Bangalore, India	Manager	\$123.0			
8 <u>Alar, Milan (reserv</u>	<u>e)</u> Nov 13, 2006	Oklahoma City, Oklahoma	Senior Consultant	\$366.0			
9 <u>Barajas, Quinn (re</u>	<u>serve)</u> J <mark>un 19, 2006</mark>	Annapolis, Maryland	Manager	\$439.0			
10 Kamerling, Jayson	<u>(reserve)</u>	Baltimore, Maryland	Senior Consultant	\$371.0			

# OFESSIONAL STAFFING MANAGER

\$75.00 2

\$75.00

#### PROJECT PORTFOLIO

Proje <u>Any</u>	ect 	typ <u>Fix</u>	e: ed B	<u>id</u>	Ti	<u>me/</u>	Mat	eria	ls	

**PROVEN CONSULTANTS** 

RYANT, JENIFFER Consultant

PARDE, ELENORE

Consultant

Consultant Characteristics 10 MATCHING CONSULTANT(S) Clear All Filters 😳

### Availability Now 🛛. Within 2 weeks (12), Within 4 weeks (13), More than 4 weeks (27) Custom

Bill Rate less than \$200.00 ©, 0 to 100 (7), 100 to 200 (3) Custom

Industry Experience Direct Life Insurance Carriers 🔍 Manufacturing (6), Professional, Scientific, and Technical Services (3), Printing and Related Support Activities (1), More...

### Accounts

Assicurazioni Generali (7), Vahoo! Inc. (3), Prudential plc (3), More...

### Consultant Listing RESULTS 1 - 1

Sort By: Default

Consultant Name

- Parde, Elenore (reserve)
- Ryant, Jeniffer (reserve) 2
- 3 (reserve)

9

- Llanes, Johnathon (reserve)
- Giancola, Thomasina (reserve) 5
- Gwynn, Sook (reserve) 6
- Paniagua, Taisha (reserve)
- Murtha, Judith (reserve) 8
- Antenucci, Shirely (reserve) 10 Dobbratz, Keiko (reserve)

### Level

Management Analyst (1), Senior Management Analyst (2), Consultant (6), Senior Consultant (1)

International Experience United States (9), Italy (7), Netherlands (4), More...

Practice Vertical Banking (4), Electronics Software (2), Aerospace & Defense (1), More...

## WITHIN CURRENT RESULTS

Country

India (7), Spain (2), Denmark (1)

Software Application Experience SAP - ERP 😳. Vignette (7), Peoplesoft - ERP (6), Siebel - BI (4), More...

Performance Rating 1(2), 2(3), 3(3), 4(1), 5(1)

Functional Experience Integration Services (8), CRM Solutions (7), Infrastructure Solutions (5), More...

With Guided Navigation, users do not need to know how to ask a question or guess at what is available - they are presented with all the criteria, and their possible values, in dynamic menus. Here, the user selects consultants:

LISTING PAGE DETAIL PAGE UTILIZATION

- (1) Available Now
- (2) Bill Rate Less than \$200.00
- (3) Industry Experience in Direct Life Insurance
- (4) Software App Experience with SAP

Notice how the dynamic nature of Guided Navigation automatically points out the only locations where such a consultant is available are India, Spain, and Denmark. Because all menu options are continuously driven off the data - including accounting for previous criteria selections - users are quickly exposed to tradeoffs without having to guess.

Apr 10, 2006	Bangalore, India	Consultant	\$62.00
Apr 10, 2006	Bangalore, India	Consultant	\$61.00
May 1, 2006	Copenhagen, Denmark	Senior Management Analyst	\$148.00
May 1, 2006	Bangalore, India	Consultant	\$51.00

ENDECA PROFESSION	AL STAFFING MANAGER	LISTING PAGE DETA	ALL PAGE UTILIZATION	BENCH CALL
PROJECT PORTFOLIO Project type: Any   Fixed Bid   Time/Materials	Consultant Characteristics 12 Clear All Filters ©	MATCHING CONSULTANT(S)	WITHIN CURRENT RESU	JLTS
Click on "add to project" next to the consultants below to staff this project.	Availability Now ©, Within 2 weeks ©, <u>Within 4 weeks</u> (13), <u>More than 4 weeks</u> (27) <u>Custom</u>	<b>Level</b> <u>Management Analyst</u> (2), <u>Senior</u> <u>Management Analyst</u> (2), <u>Consultant</u> (7), <u>Senior Consultant</u> (1)	2 Country India (8), Spain (2), Denn Software Application E	<u>tark</u> (1), <u>More</u> xperience
PROVEN CONSULTANTS	<i>Bill Rate</i> less than \$200.00 <sup>©</sup> , <u>0 to 100</u> (8), <u>100</u> to 200 (4) <u>Custom</u>	International Experience <u>United States</u> (11), <u>Italy</u> (7), <u>Netherlands</u> (4), <u>More</u>	<u>Vignette</u> (7), <u>Peoplesoft -</u> <u>Siebel - BI</u> (5), <u>More</u>	<u>ERP</u> (6),
PARDE, ELENORE Consultant \$75.00 RYANT, JENIFFER Consultant \$75.00	Industry Experience Direct Life Insurance Carriers ©, Manufacturing (8), Information (3), Leather and Allied Product Manufacturing (1), More Accounts Assicurazioni Generali (7), Yahoo! Inc. (3), Prudential plc (3), More	Practice Vertical       COUNTRY         Banking (4), Electronics Soft <ul> <li>Denma</li> <li>India (3)</li> <li>Spain (3)</li> <li>USA (1)</li> </ul>	IX1         (1), 5           rk (1)         ance           s)         tructu           2)	(1) • <u>CRM</u> <u>ire Solutions</u>
	Consultant Listing RESULTS 1 - 12	OF 12	Locat	ion 🗺
	Sort By: Default  Consultant Name  Perhaps our more local. If just need an incorporate th intuitively est Giancola, Thomasin Giancola, Taisha (r More" sho and we are p Berniagua, Taisha (r Murtha, Judith (rese	project is in the USA and we we Perhaps we have some flexibility expert to help with a sales pitch hat tradeoff by adding "Within 2 ablishes an "or" condition). (2) ws up in our menu under Count presented with the full list, now in our project is in Quebec, and w o speaks french	ould prefer someone y on the timing, or (1) We can quickly weeks" (this Notice how the ry? (3) One click ncluding the USA. e were hoping to find	Bill Rate \$75.00 \$75.00 \$134.00 \$66.00 \$164.00 \$134.00 \$89.00 \$62.00 \$62.00 \$61.00

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#### PROJECT PORTFOLIO

Project type: Any | Fixed Bid | Time/Materials

Click on "add to project" next to the consultants below to staff this project. Consultant Characteristics 2 MATCHING CONSULTANT(S) Clear All Filters ©

Search	Refinements
frunch 🤇	)

Availability Now Q, Within 2 weeks Q, Within 4 weeks (2), More than 4 weeks (4) Custom

Bill Rate less than \$200.00 <sup>(2)</sup>, <u>0 to 100</u> (1), <u>100</u> to 200 (1) <u>Custom</u>

Industry Experience Direct Life Insurance Carriers ©, Manufacturing (1), Professional,

(1) Though we misspell "Frunch", data-driven spell correction automatically finds the correct spelling in the body-text of resumes (2). (3) Notice here the integration between search and our dynamic menus tells us that people who mention "French" in their resume, alongside all our other criteria, are only available in India or Spain for this time period. While it may seem like we just executed a search and combined the results with prior SQL calls, it turns out that Endeca's infrastructure is entirely different, delivering a patented, unique and useful capability. When presented with this tradeoff, we may relax our criterion around industry experience...

Level Senior Management Analyst (1), Consultant (1) International Experience

LISTING PAGE

United States (2), Italy (2), Netherlands (1)

Practice Vertical Financial Services (1), Insurance (1)

2 (1), 3 (1) Functional Experience Integration Services (2), Enterprise Solutions (2), CRM Solutions (1), More...

Software Application Experience

Vignette (2), Siebel - BI (1), Peoplesoft

DETAIL PAGE UTILIZATION

Country

SAP - ERP Q.

India (1), Spain (1)

- CRM (1), More ...

Performance Rating

WITHIN CURRENT RESULTS

frunch



2 <u>Paniagua, Taisha (reserve)</u> Apr 10, 2006 Bangalore, India Consultant \$62.00 ...directing sales & marketing, and collections. LANGUAGES Native Spanish speaker, Fluent in Italian and conversational French. ARTICLES AND PUBLICATIONS Senior Editor, Law Department Spending Survey. Responsible for coordinating the production...

|--|

\$144.00

#### PROJECT PORTFOLIO

Project type: Any Fixed Bid Time/Materials

**PROVEN CONSULTANTS** 

MINGES, WILEY Management Analyst

GOSIER, ROSALINDA Management Analyst

BARDE, FLORIA Management Analyst

need.

Consultant Characteristics 15 MATCHING CONSULTANT(S) Clear All Filters 😳

Availability New Q. Within 2 weeks (21), Within 4 weeks (27), More than 4 weeks (103) Custom

**Bill Rate** 100 to 200 less than \$200.00 <sup>O</sup>, Custom

Industry Experience Manufacturing (15), Information (9), Finance and Insurance (6), More...

Accounts

State California (3), Virginia (1), Tennessee (1), More...

LISTING PAGE DETAIL PAGE

Level Management Analyst (9), Senior Management Analyst (6)

International Experience United States

Practice Vertical Electronics Software (6), Financial Country USA O. India (40), China (28), Austria (2),

WITHIN CURRENT RESULTS

More....

Software Application Experience SAP - ERP Q. Siebel - BI (6), MatrixOne (6), Siebel -CRM (5), More...

Performance Rating <u>1</u> (5), <u>2</u> (5), <u>4</u> (2), <u>5</u> (3)



ENDECA PROFESSIO	NAL STAFFING MANAGE	ER LISTING PAGE	DETAIL PAGE UTILIZATION BENCH CALL
PROJECT PORTFOLIO Project type: Any   Fixed Bid   Time/Materials	Consultant Characteristics	2 MATCHING CONSULTANT(S)	WITHIN CURRENT RESULTS
Click on "add to project" next to the consultants below to staff this	Location: Office Geocode: less than 250 miles from	a Detroit, Michigan, United States ©,	
	Availability Now 0, Within 2 weeks (2), Within 4 weeks (2),	<b>State</b> <u>Ohio</u> (1), <u>Indiana</u> (1)	Country USA ©,
	More than 4 weeks (6) Custom	<b>Level</b> Management Analyst	Software Application Experience SAP - ERP ©, Siebel - BI (1) Vignette (1) Cospes (1)
	100 to 200 less than \$200.00 ©, <u>Custom</u>	International Experience United States	<u>More</u> <u>More</u> <u>Devformance</u> Pating
	Manufacturing (2), Information (1), Management of Companies and	Notico how our list of rosul	te is now filtered by geospatial

Notice how our list of results is now filtered by geospatial coordinates (1) and sorted by geo-proximity (2) to indicate base options. Of course, we could choose to apply any other sort (3) or select new criteria from the always-current Guided Navigation options.

Sort By: Office Geocode	2 OF 2		Specify Loca	tion 🦘
Consultant Name	Available 🧡	Location	Level	Bill Rate
1 Salsman, Thomasena (reserve)	May 29, 2006	Cleveland, Ohio	Management Analyst	\$134.00
Distance from specified location: 93.43	3 miles.			
2 Scarritt, Jade (reserve)	Jul 11, 2005	Indianapolis, Indiana	Management Analyst	\$119.00
Distance from specified location: 230.7	77 miles.	1		

<u>Management of Companies and</u> <u>Enterprises</u> (1)

### Accounts

<u>Cisco Systems, Inc. (1), Intel</u> <u>Corporation (1), Wachovia Corporation</u> (1), More...



# ENDECA PROFESSIONAL STAFFING MANAGER

\$75.00

\$75.00

### LISTING PAGE DETAIL PAGE UTILIZATION BENCH CALL

#### PROJECT PORTFOLIO

Project type: Any | Fixed Bid | Time/Materials

Click on "add to project" next to the consultants below to staff this project.

**PROVEN CONSULTANTS** 

PARDE, ELENORE Consultant

BLOGG, ASHLEY Consultant

#### MANNER, DEL T Consultant

Consultant Characteristics

Availability Now ©, Within 2 weeks (63), Within 4 weeks (70), More than 4 weeks (99) Custom

Bill Rate 0 to 100 ©.

<u>100 to 200</u> (37), <u>200 to 300</u> (19), <u>300</u> to 400 (10), <u>400 to 500</u> (8) <u>Custom</u>

**Industry Experience** <u>Manufacturing</u> (35), <u>Finance and</u> <u>Insurance</u> (24), <u>Wholesale Trade</u> (3), <u>More...</u> Level

58 MATCHING CONSULTANT(S)

Management Analyst (10), <u>Consultant</u> (37), <u>Senior Consultant</u> (11)

International Experience United States (49), Japan (13), Netherlands (8), More...

Practice Vertical Electronics Software (10), Communications (6), Automotive (5), More... WITHIN CURRENT RESULTS Country India (33), China (25) Software Application Experience SAP - ERP ©, Peoplesoft - ERP (31), Siebel - BI (28), Cognos (23), More...

Performance Rating <u>1</u> (11), <u>2</u> (16), <u>3</u> (25), <u>4</u> (4), <u>5</u> (2)

Functional Experience Integration Services (56), <u>CRM</u> Solutions (42), <u>Infrastructure Solutions</u> (41), More...

But this is just one example. The key to enabling this form of decision support is to builds and dynamically present every path implied by the data – literally billions of combinations – with the interactive response time required to encourage exploration of tradeoffs. This is just one way that it is very different from search or database technologies, the former of which does not present this context and the latter of which requires a careful anticipation of any presented navigation that precludes this free-form interaction.

For instance, here we start out with a focus on margin and availability, (1) and Guided Navigation helps us discover that there are qualified people (2) available in China and India (3), which the user might not otherwise be aware of...

8 <u>Premer, Annamarie (reserve)</u>

9 <u>Iturbe, Cassidy (reserve)</u>

10 <u>Bastilla, Velma (reserve)</u>

f			Specify Locatio	<u>.</u> 37
		Location	Level	Bill Rate
	03	Bangalore, India	Consultant	\$75.00
	2006	Bangalore, India	Consultant	\$75.00
	005	Bangalore, India	Consultant	\$75.00
hat (3),	2006	Bangalore, India	Consultant	\$75.00
	06	Beijing, China	Consultant	\$75.00
	2006	Bangalore, India	Consultant	\$75.00
	005	Beijing, China	Consultant	\$73.00
9, 2	2006	Beijing, China	Management Analyst	\$17.00
23,	2006	Bangalore, India	Consultant	\$74.00
5, 2	2006	Bangalore, India	Consultant	\$72.00
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# OFESSIONAL STAFFING MANAGER

\$73.00

PROJECT PORTFOLIO

Project type: Any Fixed Bid Time/Materials

#### **PROVEN CONSULTANTS**

MANNER, DELTA Consultant \$73.00 APREA, NOEMI \$72.00 Consultant

BYHAM, JETTA Consultant

Consultant Characteristics 21 MATCHING CONSULTANT(S) Clear All Filters 🗯

Availability Now 🛈, Within 2 weeks (22), Within 4 weeks (29), More than 4 weeks (50) Custom

Bill Rate 0 to 100 ©. 100 to 200 (3) Custom

Industry Experience Manufacturing (19), Management of Companies and Enterprises (8), Wholesale Trade (3), More...

Accounts Cisco Systems, Inc. (8), Samsung Electronics Co., Ltd. (5), Land O'Lake Inc. (4), More...

City Beijing

Level Management Analyst (4), Consultant (13), Senior Consultant (4)

International Experience United States 🔘. Japan (9), Korea (5), Spain (1)

Practice Vertical Financial Services (6), Electronics Software (4), Communications (3), More....

WITHIN CURRENT RESULTS

Country China 😳 India (28)

Software Application Experience SAP - ERP 🔘 Siebel - BI (12), Peoplesoft - ERP (10), Peoplesoft - CRM (10), More...

Performance Rating 1(4), 2(5), 3(10), 4(2)

Functional Experience Integration Services (21), CRM Solutions (16), Infrastructure Solutions (13), More...

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Given the foreign location, international experience in the United States might become more important...we are looking for someone with High Tech manufacturing experience, but not from Cisco which is deemed a competitor...

LISTING PAGE DETAIL PAGE

### Consultant Listing RE

Specify Location Sort By: Default ¥ Consultant Name Available Location Level **Bill Rate** 1 Freymuth, Debera (reserve) Jan 9, 2006 Beijing, China Consultant \$75.00 2 Santizo, Dana (reserve) Feb 7, 2005 Beijing, China Consultant \$73.00 3 Premer, Annamarie (reserve) Jan 9, 2006 Beijing, China Management Analyst \$17.00 Jarding, Cris (reserve) Senior Consultant \$98.00 4 Feb 7, 2005 Beijing, China 5 Oines, Theda (reserve) Jan 9, 2006 Beijing, China Management Analyst \$12.00 6 Traster, Chas (reserve) Beijing, China Consultant \$69.00 Jan 9, 2006 7 Provence, Al (reserve) Beijing, China Senior Consultant \$91.00 Mar 20, 2006 Uriostejue, Daphine (reserve) Management Analyst \$12.00 8 Aug 8, 2005 Beijing, China 9 Isassi, Aurelio (reserve) Aug 8, 2005 Beijing, China Consultant \$65.00 10 Feiteira, Priscila (reserve) May 31, 2004 Beijing, China Consultant \$60.00

# ENDECA PROFESSIONAL STAFFING MANAGER

\$73.00

Consultant Characteristics

LISTING PAGE DETAIL PAGE UTILIZATION BENCH CAI

#### PROJECT PORTFOLIO

Project type: Any | Fixed Bid | Time/Materials

Click on "add to project" next to the consultants below to staff this project.

#### PROVEN CONSULTANTS

Consultant

MANNER, DELTA Consultant \$73.00 APREA, NOEMI Consultant \$72.00 BYHAM, JETTA

Clear All Filters 🗯 ACCOUNTS [X] Availability Corporation [1] ~ Now 🔍 Intel Corporation (2) Within 2 weeks (22), Within 4 (29), More than 4 weeks (50) KeyCorp (1) Consultant Bill Rate (4) Land O'Lakes, Inc. (4) 0 to 100 Q.  $\checkmark$ Level 3 Communications, Inc. 100 to 200 (3) Custom epce (1)Industry Experience p. in (1) Matsushita Electric Industrial Manufacturing (19), Managem Companies and Enterprises (8 <u>Co., Ltd</u> (4) Electronics Wholesale Trade (3), More... Maxim Integrated Products cations (3), Inc. (1) Accounts <u>Cisco Systems, Inc.</u> (8), <u>Sam</u> Regions Financial Corp. (1) Electronics Co., Ltd. (5), Land Samsung Electronics Co., Inc. (4), More... Ltd. (5) ~ Sharp Corporation (1) Apply. Cancel

### WITHIN CURRENT RESULTS

**Country** China ©, India (28)

Software Application Experience SAP - ERP ©, Siebel - BI (12), Peoplesoft - ERP (10), Peoplesoft - CRM (10), More...

**Performance Rating** 1(4), 2(5), 3(10), 4(2)

Functional Experience Integration Services (21), CRM Solutions (16), Infrastructure Solutions (13), More...

#### Consultant Listing RESULTS 1 - 21 OF 21 Sort By: Default ¥ Expanding our list of accounts gives a complete picture of what is available with our prior criteria. It turns out there are several Consultant Name Freymuth, Debera (reserve) acceptable options... 1 Santizo, Dana (reserve) 2 3 Premer, Annamarie (reserve) Jan 9, 2006 Beijing, China Management Analyst \$17.00 4 Jarding, Cris (reserve) Feb 7, 2005 Beijing, China Senior Consultant \$98.00 5 Oines, Theda (reserve) Jan 9, 2006 Beijing, China Management Analyst \$12.00 6 Traster, Chas (reserve) Jan 9, 2006 Beijing, China Consultant \$69.00 7 Provence, Al (reserve) Beijing, China Senior Consultant \$91.00 Mar 20, 2006 8 Uriostejue, Daphine (reserve) Beijing, China Management Analyst \$12.00 Aug 8, 2005 9 Isassi, Aurelio (reserve) Aug 8, 2005 Beijing, China Consultant \$65.00 10 Feiteira, Priscila (reserve) May 31, 2004 Beijing, China Consultant \$60.00

21 MATCHING CONSULTANT(S)

## ENDECA PROFESSIONAL STAFFING MANA

#### PROJECT PORTFOLIO

Project type: Any | Fixed Bid | Time/Materials

Click on "add to project" next to the consultants below to staff this project.

#### PROVEN CONSULTANTS

<u>MANNER, DELTA</u> Consultant	\$73.00
<u>FREYMUTH, DEBERA</u> Consultant	\$75.00
BYHAM, JETTA Consultant	\$73.00

# Consultant Characteristic

Availability

Now 2, <u>Within 2 weeks</u> (10), <u>Within 4 weeks</u> (16), More than 4 weeks (6) Custom

Bill Rate 0 to 100 0, 100 to 200 (1) Custom

Industry Experience Manufacturing (9), Finance and Insurance (4), <u>Wholesale Trade</u> (2), More...

### Accounts

Agere Systems, Inc. ©, Arrow Electronics, Inc. ©, Fairchild Semiconductor International ©, Intel Corporation ©, Level 3 Communications, Inc. ©, Matsushita Electric Industrial Co., Ltd ©, Samsung Electronics Co., Ltd. ©, <u>Cisco Systems, Inc.</u> (8), <u>Land O'Lakes</u>,

...bringing us down to 10 options that satisfy our interests. Notice how as we interact with the system, we uncover more criteria (for instance, had we not discovered China, we would not have cared as much about U.S. experience)? This highlights a substantial advantage of interactive Guided Navigation over parametric search systems that require the user to input all criteria at once, and then submit a search.

Also, notice how with Guided Navigation, the user is never presented with options that lead to no results found. With parametric search, the user is forced to guess, and those guesses often overlook ideas like China, or yield no results found where there are acceptable tradeoffs. Guided Navigation, on the other hand, helps users optimize their decisions across a constantly changing environment by exposing the options in the data according to criteria meaningful to the user.

on	sultant Listing RESULTS 1 -	- 10 OF 10			
Sort	By: Default 💙			Specity Lo	cation (***
	Consultant Name	Available	Location	Level	Bill Rate
1	Freymuth, Debera (reserve)	Jan 9, 2006	Beijing, China	Consultant	\$75.00
2	Santizo, Dana <u>(reserve)</u>	Feb 7, 2005	Beijing, China	Consultant	\$73.00
з	<u>Premer, Annamarie (reserve)</u>	Jan 9, 2006	Beijing, China	Management Analyst	\$17.00
4	Jarding, Cris (reserve)	Feb 7, 2005	Beijing, China	Senior Consultant	\$98.00
5	<u>Oines, Theda (reserve)</u>	Jan 9, 2006	Beijing, China	Management Analyst	\$12.00
6	Provence, Al (reserve)	Mar 20, 2006	Beijing, China	Senior Consultant	\$91.00
7	<u>Feiteira, Priscila (reserve)</u>	May 31, 2004	Beijing, China	Consultant	\$60.00
8	<u>Wrubel, Claretha (reserve)</u>	Apr 10, 2006	Beijing, China	Consultant	\$63.00
9	<u>Lespier, Sheila (reserve)</u>	Jan 9, 2006	Beijing, China	Consultant	\$64.00
10	Lunch, Delorse (reserve)	Jan 9, 2006	Beijing, China	Management Analyst	\$10.00

# OFESSIONAL STAFFING MANAGER

### LISTING PAGE DETAIL PAGE



Consultant Listing	RESULTS 1 - 25 OF 2435
--------------------	------------------------

Cor	nsultant Listing Results	1 - 25 OF 2435	5	_	
Sor	t By: Default 🛛 💙			Specify Location	24.2
	Consultant Name	Available	Location	Level	Bill Rate
1	<u>Hanzl, Hollis (reserve)</u>	Jul 10, 2006	Dayton, Ohio	Senior Consultant	\$366.00
2	<u>Schildgen, Lacy (reserve)</u>	Oct 10, 2005	Geneva, Switzerland	Manager	\$436.00
з	<u>Whitehall, Narcisa (reserve)</u>	Nov 6, 2006	Atlanta/Shared Services, Georgia	Senior Management Analyst	\$173.00
4	<u>Madrazo, Jonathon (reserve)</u>	Jan 1, 2007	Annapolis, Maryland	Management Analyst	\$143.00
5	<u>Whiteaker, Nyla (reserve)</u>	Oct 9, 2006	Dahlgren, Virginia	Consultant	\$296.00
6	<u>Puleo, Criselda (reserve)</u>	Aug 28, 2006	Stuttgart, Germany	Senior Management Analyst	\$173.00
7	<u>Maultasch, Delmer (reserve)</u>	Feb 2, 2004	Bangalore, India	Manager	\$123.00
8	<u>Alar, Milan (reserve)</u>	Nov 13, 2006	Oklahoma City, Oklahoma	Senior Consultant	\$366.00
9	<u>Barajas, Quinn (reserve)</u>	Jun 19, 2006	Annapolis, Maryland	Manager	\$439.00
10	<u>Kamerling, Jayson (reserve)</u>	Oct 16, 2006	Baltimore, Maryland	Senior Consultant	\$371.00

#### OFESSIONAL STAFFING MANAGER LISTING PAGE DETAIL PAGE PROJECT PORTFOLIO Consultant Characteristics 2435 MATCHING CONSULTANT(S) Project type: Any | Fixed Bid | Time/Materials WITHIN CURRENT RESULTS AVAILABLE DATE [X] Availability Country Now (478), Within 2 weeks (57 USA (1466), China (358), India (346), 502), Senior 4 weeks (739), More than 4 we 342), Consultant More.... (1696) Custom nt (517). Available On or Before: Software Application Experience Manager (95) Vignette (762), Cognos (760), IBM - BI **Bill Rate** July 2006 0 to 100 (627), 100 to 200 (7 (703), More... ence **PROVEN CONSULTANTS** Su Mo Tu We Th Fr Sa to 300 (401), 300 to 400 (423 Japan (253), Performance Rating 500 (195) Custom 25 26 27 28 29 30 1 re... SCHILDGEN, LACY 1 (461), 2 (560), 3 (853), 4 (363), 5 \$436.00 Manager 4 5 6 2 3 7 8 Industry Experience (198)Manufacturing (2038), Finance '54), <u>Automotive</u> 9 10 11 12 13 14 15 MAULTASCH, DELMER Functional Experience Insurance (1567), Apparel fense (125), \$123.00 Manager 16 17 18 19 20 21 22 Integration Services (1951), Manufacturing (346), More... Infrastructure Solutions (1689), CRM 23 24 25 26 27 28 29 HANZL, HOLLIS Solutions (1597), More... Accounts \$366.00 Senior Consultant Intel Corporation (127), Scient 30 31 1 2 3 4 5 Atlanta, Inc. (125), Goldman S Group, Inc. (76), More... Apply. Cancel ...custom date ranges, visual map geospatial filters (e.g., draw a Consultant Listing Result circle on a map), and many others. Sort By: Default ¥ Available Level Bill Rate **Consultant** Name Location Jul 10, 2006 1 Hanzl, Hollis (reserve) Dayton, Ohio Senior Consultant \$366.00 Schildgen, Lacy (reserve) Oct 10, 2005 Geneva, Switzerland \$436.00 2 Manager Whitehall, Narcisa (reserve) 3 Nov 6, 2006 Atlanta/Shared Services, Georgia Senior Management Analyst \$173.00 4 Madrazo, Jonathon (reserve) Jan 1, 2007 Annapolis, Maryland Management Analyst \$143.00 Whiteaker, Nyla (reserve) Oct 9, 2006 Dahlgren, Virginia Consultant \$296.00 5

Aug 28, 2006 Stuttgart, Germany

Oct 16, 2006 Baltimore, Maryland

Bangalore, India

Annapolis, Maryland

Nov 13, 2006 Oklahoma City, Oklahoma

Feb 2, 2004

Jun 19, 2006

Senior Management Analyst

Manager

Manager

Senior Consultant

Senior Consultant

\$173.00

\$123.00

\$366.00 \$439.00

\$371.00

6

7

8

9

Puleo, Criselda (reserve)

Barajas, Quinn (reserve)

10 Kamerling, Jayson (reserve)

Alar, Milan (reserve)

Maultasch, Delmer (reserve)



## CA PROFESSIONAL STAFFING MANAGER

Utilized Distribution

By: Country | Level | Practice Ver

65% USA

Graph: Utilization

### Applied Filters

[X]

### Utilization Rate Breakdown

No filters selected

### **Range Filters**

- Bill Rate
- Week Start Date
- Performance Rating

### Filter By

#### Account Attributes

- Account City
- Account Country
- <u>Account Name</u>
- <u>Account State</u>
- NAICS Class
- SIC Class

#### Employee Attributes

- Bill Rate
- City
- Country
- Functional Experience
- Industry Experience
- International Experience
- Level
- Performance Rating
- Practice Area
- Practice Vertical
- Region
- <u>Software Application</u>
   <u>Experience</u>
- <u>State</u>

### Project Attributes







13% China

4% German

1% Switzerland

12% India

LISTING PAGE DETAIL PAGE UTILIZATION BENCH CALL

### Utilization Rate History

### Graph: Utilization

#### By: week

And by: Country | Level | Practice Vertical | Performance Rating



Thinking back to the previous screens, remember next to the menus there were parenthetical numbers? These reflected a summarization of the data in each filtered state. These parenthetical numbers – in addition to derived calculations like averages, sums, etc. – can be shown as charts. These visual representations are very different from BI dashboards. They operate from the same core engine technology and are every bit as easy to explore and dynamic as the rest of this system. Suppose we notice China's utilization rate is low...

45% USA

21% China

1% Denmi

India

1% Switzerland is

4% Germany



### Practice Vertical

### Software Application Experience

### Project Attributes

- Project End Month
   Project End Vear
- Project Start Month
   Project Start Year
- Project Type





### Performance Scorecard

### Column: Level

Rows: Software Application Experience

	Change: <u>Region</u>	Practice Ve	ertical   Perfo	rmance Rating	Functional Experient	ce
vst[s]	Consulta	nt[s]	Senior Cons	ultant[s]	Manager[s]	All

47%

72%

Change: Region | Practice Vertical | Performance Rating | Functional Experience

73%

66%

Utilization	Manac	ement Analy
Agile[s]	60%	
<u>Business Objects[s]</u>	72%	
Cognos[s]	<u>69%</u>	
Documentum[s]	74	This area
FileNet[s]	59	
IBM - BI[s]	59	suffering
Interwoven[s]	51	explore.
<u>MatrixOne[s]</u>	56	unlike the
Microsoft[s]	74	discreet
Microstrategy[s]	<u>67</u>	available
Oracle - BI[s]	69	available
Oracle - CRM[s]	<u>64%</u>	
Oracle - ERP[s]	93%	
Peoplesoft - CRM[s]	74%	
Peoplesoft - ERP[s]	74%	
PTC[s]	23%	
SAP - CRM[s]	90%	
SAP - ERP[s]	<u>68%</u>	
SAP - PLM[s]	<u>68%</u>	
Siebel - BI[s]	71%	
Siebel - CRM[s]	<u>69%</u>	
UGS[s]	<u>66%</u>	
Vignette[s]	73%	
All	67%	

	<u>65%</u>	<u>63%</u>	<u>65%</u>	<u>66%</u>
	70%	<u>68%</u>	52%	<u>67%</u>
This cross-tab suffering, as we explore. This " unlike these sy discreet set of available, with	view delivers so ell as the option within-set" navig stems, no one n questions in the sub-second inte	me visual cues as to adjust the analy gation is more typic leeded to configure index. As before, raction time.	to where utilization vsis on the column cal of BI systems. e Endeca to anticip every possible qu	n is or row to However, pate a estion is

71%	<u>64%</u>	77%	<u>69%</u>
91%	91%	93%	91%
70%	59%	<u>64%</u>	<u>67%</u>
<u>68%</u>	60%	75%	67%
<u>69%</u>	35%	58%	54%
89%	89%	91%	89%
<u>69%</u>	<u>65%</u>	79%	<u>69%</u>
<u>67%</u>	56%	52%	<u>63%</u>
<u>62%</u>	<u>60%</u>	<u>60%</u>	<u>64%</u>
<u>66%</u>	58%	72%	65%
<u>63%</u>	75%	89%	71%
71%	73%	75%	72%
<u>68%</u>	<u>65%</u>	<u>62%</u>	67%
	71% 91% 70% 68% 69% 89% 69% 69% 62% 62% 66% 63% 71% 63%	71%       64%         91%       91%         70%       59%         68%       60%         69%       35%         89%       89%         69%       65%         67%       56%         62%       60%         62%       60%         63%       75%         71%       73%         68%       65%	71%       64%       77%         91%       91%       93%         70%       59%       64%         68%       60%       75%         69%       35%       58%         89%       89%       91%         69%       65%       79%         69%       65%       79%         67%       56%       52%         62%       60%       60%         62%       60%       60%         62%       60%       50%         63%       75%       89%         71%       73%       75%         68%       65%       62%



#### Bill Rate

- Country •
- Functional Experience
- Industry Experience .
- International Experience .
- Level
- Performance Rating Practice Vertical
- Software Application ٠ Experience

### Project Attributes

- Project End Month
- Project End Vear .
- Project Start Month Project Start Vear
- Project Type



Here we click on the RECORDS tab to get a more granular sense of what is going on. Even without sorting, it is pretty clear that there are a lot of low performance ratings contained in this list. However, a quick glance indicates some anomalies like Naketa, who is rated "1" but is unutilized. A sort will immediately deliver all of these anomalies, should we want to take action to ensure that high-performers get staffed, lest we lose them. But in this case, we decide to look at the aggregates again to see if there is a trend.

Consu	itants

Results 1-10 of 36.

	Name	Level	Practice Area	<u>City</u>	<u>Total</u> <u>Projects</u>	Performance Rating	Weeks Utilized	Weeks Un Utilized	<u>Bill Rate</u>
1	Burttram, Clay	<u>Senior</u> <u>Consultant</u>	APAC	<u>Beijing</u>	6	4	138	17	\$81.00
2	Nakata, Marcelino	<u>Senior</u> Consultant	APAC	<u>Beijing</u>	1	1	0	145	\$100.00
3	Smithj, Corazon	Consultant	APAC	Beijing	1	3	0	160	\$64.00
4	Foxe, Farah	Consultant	APAC	Beijing	6	1	145	10	\$73.00
5	Feiteira, Priscila	Consultant	APAC	Beijing	3	3	15	104	\$60.00
6	Derden, Stephine	<u>Senior</u> Consultant	APAC	<u>Beijing</u>	6	3	90	51	\$86.00
7	Garbarino, Freddy	Consultant	APAC	<u>Beijing</u>	8	3	124	17	\$64.00
8	Bourgois, Ervin	<u>Senior</u> Consultant	APAC	<u>Beijing</u>	1	3	0	158	\$87.00
9	Wanschek, Nicolette	Consultant	APAC	<u>Beijing</u>	2	3	47	40	\$62.00
10	Osier, Tamiko	Consultant	APAC	Beijing	2	5	15	102	\$54.00





#### DFESSIONAL STAFFING MANAGER LISTING PAGE DETAIL PAGE UTILIZATION BENCH CALL **Applied Filters** [X] Utilization Rate History Utilization Rate Breakdown Graph: Utilization Graph: Utilization [X] [edit] Country China By: Country | Level | Practice Vertical | Performance Rating By: week And by: Country | Level | Practice Vertical | Performance Rating 0.75 **Range Filters** 0.6 0.8 0.45 0.6 **Bill Rate** 0.3 Week Start Date 0.4 Performance Rating 0.15 BILL RATE [X] 0.2 0 0 to 100 n. $\theta_2$ 100 to 200 Filter By As before, all Guided Navigation filters are available, and they continue to show the Account Attributes "shape" of the data by providing only meaningful options. Here, for instance, Account City Account Country popping up a Bill Rate filter removes options over 200, which do not exist in China. Account Name Account State The key to this summarization is that it is not static, as reporting systems are, and NAICS Class does not require building data models or cubes that anticipate what gueries need to SIC Class be supported, as with ROLAP or MOLAP. While there are tradeoffs as with any Employee Attributes system, the core algorithms behind Endeca lift substantial IT restrictions and **Bill Rate** thereby enable very broad audiences of business users to easily interact with and Country explore data and content. This empowers line managers to guickly pursue their Functional Experience Industry Experience Cancel own insights and optimize their decisions without being constrained by a least-International Experience Level common-denominator infrastructure. Performance Rating Practice Vertical Software Application 43% 3 Experience 46% 3 Project Attributes Project End Month Project End Year

.

Project Start Month

# Or summarizations like this.....

v

#### **Content Type**

Drug References (5,584) Medline Citations (1,500,000) Medscape Articles (26,671) Medscape Images (11,676)

Author	
Nakamura T (1,104)	
Nakamura M (758)	
Zhang Z (725)	
tto M (706)	
Matsumoto K (706)	

#### Medline Citations

Publication Type	
Journal Article (1,354,973)	1
Review (194,053)	
Review, Tutorial (157,942)	
Case Reports (130,146)	
Letter (76,035)	-

A absence activity adjoose tissue age group agents alpha amine aneurysm Ang antagonist apoptosis array anhythmias aftery assay atoms aureus authors benefit biodrade blood

blood pressure bond cancer cells capture Calle cell cycle cell division cell types Cells cerebellum chemicals Chemotherapy class classification clinic clinical pharmacy clones Cochrane code column compartment components Compounds conduction contrast contribution control group controlled trials COSt course COX-2 CR criteria CT culture Cycle data database decrease defects degrees differentiation disability discharge disease distribution DNA domain dose drug duration dysfunction effector efficacy efficiency electrode embryos episodes epithelium estimates ET examination expression fertilization fibers fibrosis field filaments fistula (tap function CABA gangia gene gene expression gene therapy gene transfer granules growth guidelines health Hiv hospital hours hydrogen hypertension hypothalamus IC identification IL-16 ta Images implantation improvement incidence industry inhibition initiation intrake intervention ion inon isoforms issues kidney limb localization maintenance measurements medication membrane METHODS mice microscopy minutes module molety monomer morbidity

mortality mortality rate motor mRNA mu multiple sclerosis mutants **n** network neurophils NK obstruction operation **P**<sub>p21</sub> p53 paradigm **patients** pattern PCR PD permeability peticides pg/ml pharmacists pharmacy plasticity population portion PR pressure probability profile program progression proliferation prophylaxis proportion **protein** purification questionnaire range rate ratio **rats receptor** regimen region register relayse removal residues **response** revieweering RNA S. scale sclerosis Score search seizures **Sequence** set signaling signaling pathways simulation Site sleep soft tissue specialist Species specificity specimens sperm atoxicity tract transcription factors transcripts transfer **treatment** trials tube **tumor** tumor cells unioner test vector visits withdrawal Z.

### **Top 10 Authors**





# Search and BI convergence

- Architecture matters
- New opportunities to support all users in investigations and discovery



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