



Trends in Database Management
is this 1987 or 2007?

NYOUG
December 6, 2007

Michael S. Abbey — Database Officer Oracle Practice



Disclaimer

If anything I say pinches a nerve ... please remember that I can take objection to just about anything. Things I say or do for the next 40-50 minutes are deliberately "lightened-up" for the sake of the delivery of this keynote and your enjoyment ...



Since I Believe the Following

- The earth is flat
- LBJ "pulled the trigger"
- An email you receive may format your hard drive
- Your offspring will not wet the bed if you cut them off from all liquids after 7PM
- America will never elect an ex-Hollywood actor President

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Underpinnings of Our Industry

13th
15th
17th
19th
20th

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Brief History of Computers

1640	Blaise Pascal invents the first commercial calculator, a hand powered adding machine.
1801	Joseph-Marie Jacquard builds a loom that weaves by reading punched holes stored on small sheets of hardwood.
1820's	Charles Babbage begins his lifelong quest for a programmable machine, working on a "difference engine".

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Brief History of Computers

1842	Using Babbage's technology, Ada Lovelace mechanically translates a short written work.
1892	Shortly after the marketing of the first printing calculator, William Burroughs follows with the release of an electronic model.
1925	Vannevar Bush of MIT builds a machine he calls the differential analyzer ... the machine can handle simple calculus problems, but accuracy is a problem.

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Brief History of Computers

1936	John Vincent Atanasoff begins work on a digital computer in the basement of the Physics building on the campus of Iowa State.
1944	The Harvard Mark I is introduced, based on a series of proposals from Howard Aiken in the late 1930's.
1951	UNIVAC delivered to the Census Bureau, resulting in a tremendous financial loss to its manufacturer, Remington-Rand.

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Brief History of Computers

1961	Fairchild Semiconductor introduces the integrated circuit. Within ten years all computers use these instead of the transistor.
1964	IBM introduces the System/360. While a technical marvel, the main feature of this machine is business oriented.
1975	The first personal computer is marketed in kit form. The Altair features 256 bytes of memory. Bill Gates, with others, writes a BASIC compiler for the machine

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Brief History of ORACLE

1979	First commercial SQL RDBMS.
1984	First database with read consistency.
1985	First parallel server database.
1986	First client-server database.
1988	PL/SQL released.
1992	Full suite of applications.
1993	Character-mode moved to client-server model.
1994	First video server supporting media on demand.

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Brief History of ORACLE

1996	Open-standards, web-enabled architecture.
1997	First web database
1998	First to release comprehensive CRM Suite,
1999	First database with XML support.
2000	First Internet development suite.
2001	TCP-H world record on 3 terabyte repository.
2002	First to pass 15 industry standard security evaluations

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Brief History of ORACLE

2003	Introduction of Enterprise Grid Computing with Oracle Database 10g
2004	First to provide a single customer view from multiple data sources.
2005	Releases its first "free" database.
2006	First Unstructured Content Database.

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What Version are you Running

1	??	Written in assembly language for the PDP-11 and never released.
2	1980	First commercial database using SQL.
3	1982	Written in "C" and bragged about transaction processing.
4	1984	Read consistency.
5	1986	A true client-server solution.
6	1988	Parallel server and a <i>tpo</i> add-on.

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What Version are you Running

7	1993	Landmark release with procedural, distributed, and parallel query options.
8	1997	Scalability and object relational features.
9	2001	Strong (?) Application Server offering, RAC, and suite of analytical functions.
10	2004	Welcome to grid computing and ASM
11	2007	The benefits of grid computing, automation, and more self-management.

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Database Management Influencers

- Automation
- Compliance issues
- Insistence on best practices
- More robust high-availability solutions
- Swelling volumes of data
- Increased complexity of the software



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Automation

- Is it a good thing
 - does the vendor know best
 - how does the vendor know
 - "mickey-mouse" minding of this and that
- How far should it go
 - unattended this and that
 - risk of un-noticed failure



Compliance

- Ongoing or problème du jour
 - the latest and greatest
 - here today gone tomorrow?
- Password management . . .
 - universally inconvenient
 - who is exempt
 - soxadmin → s0xadm1n



Best Practices

- Are they universal
 - so subjective based on one's successes in the past
 - generic industry standard or software-specific
- How does one teach an old dog new tricks?
- Formulation is easy; implementation difficult; enforcement next to impossible

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High-availability

- Has always been a raison d'être for the DBA
- So what's new?
 - when you really get into the bowels of the offering ... **not much !!!!!!!**
 - new packaging of rock-solid solutions
- What is really new?
 - **pricing**
 - **bundling**

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More and More Data

- Gigabytes → Terabytes → Petabyte → Exabyte

byte	1
Kilobyte	1,024
Megabyte	1,048,576
Gigabyte	1,073,741,824
Terabyte	1,099,511,627,776
Petabyte	1,125,899,906,842,620
Exabyte	1,152,921,504,606,850,000
Zettabyte	1,180,591,620,717,410,000,000

- Advancements in disk and memory speed ...
 - influenced the size of repositories
 - not completely negated the effect

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Increased Complexity

- Is that the
 - nature of the problem?
 - or the nature of the solution?
- Driving force behind increased complexity
 - the customer
 - a very small percentage of clients
 - thirst of the vendor

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What Has Really Changed

- Less manual intervention ... negated by the complexity of the software and the size of the repositories
- Automatic space management ... negated by the the sheer number of databases being managed
- Fancy GUI tools ... are they part of the solution or part of the problem ■ ■ ■

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GUI Database Management

- Oracle: Database control / Grid control
- IBM: DB2 Performance Expert ... DB2 Query Patroller
- SQL Server: All encompassing management console
- MySQL: Administrator / Query Browser / Workbench

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What Do They Offer

- Lots of screens
- Timely information
- Advisors
- Drill-down
- Pretty graphs
- Enhanced VFM
- One-stop shopping
- Too many screens
- Too much information
- Confusers
- Confusers
- Too much information
- Enhanced A/R
- One-stop shopping

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When They Make Sense

- New administrators / getting up to speed
- Quick access to powerful management
- Look under the covers not available any other way
- Knowledge is information
- Would you trust them with the password(s)?
- Easier to mess things up (turbo-prop → Airbus)
- Too much information, making change decisions more complicated
- Knowledge can be dangerous

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The Human Factor

- Strategic IT decisions made at the top of organizations influenced by
 - personal preferences
 - past employment history
 - past experiences with vendors
- The public sector controlled by those with a "right" to be promoted

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IT Initiatives Derailed By

- Bickering
- Empire building
- Pursuit of job security
- Immaturity
- Lack of co-operation
- Fixed in my ways
- Personal prejudices
- Self-centred participants
- Poor hardware and software decisions
- Stubborn people

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What Has Changed

- The players
- The strength of the hardware
- The features of the software
- The throughput of the networks
- ***The cost of the hardware***
- ***The cost of the software***

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Database Management 80's

- In-house
- Full-time employees
- Some 3rd party consultants in the mix
- Benefits / sick leave / holidays add 20-30% on top of base salary
- Training and keeping up expensive and a human resource management nightmare

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Database Management 90's

- Mix of employees and 3rd party vendors
 - pieces of the pie outsourced completely
 - cost savings in the short-term
 - state-of-the-art support moving forward with the software
- Dwindling IT budgets peaking towards end of decade
- Asia and the far east

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Database Management 20's

- Outsourcing on the rise
- Over \$55 billion and rising
- Upwards of 40% cost savings
 - attractive
 - double-edged sword
- Same firm providing support in related areas (database management / system administration)

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Outsourcing Can Fail If ...

- Decision based on price alone
- Offshore selected with little attention to bandwidth and native infrastructure
- Management "legislates" the move
- Provider unwilling to share
- Technicians not 100% fluent in language of the company

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According to Gartner

1. To control cost over time
2. To provide access to highly skilled technical resources as needed
3. To enable the internal IT organisation to refocus on mission-critical, business-differentiating services to provide a higher level of strategic value to the business units

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According to Gartner

4. To increase the quality of service delivery
5. To create access to scalability

... organisations need to take a longer term view of what an outsourcing relationship can accomplish for their operations overall.

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*The single characteristic of IT
that makes one wonder ... is
this 1987 or 2007???*



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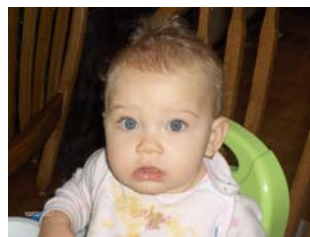


Unique Opportunity

- Within the next 6-9 years
- Something that has never happened before
- Could revolutionize the industry
- May allow companies to explore new ways to
 - manage their databases
 - satisfy their business' thirst for quality
 - undue mistakes of the past

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Retiring baby boomers creating high tech talent crisis

IT jobs get hot as baby boomers retire
While talent pool shrinks, job-seeking IT professionals have the upper hand
By [Denise Dubie](#), Network World, 07/10/07

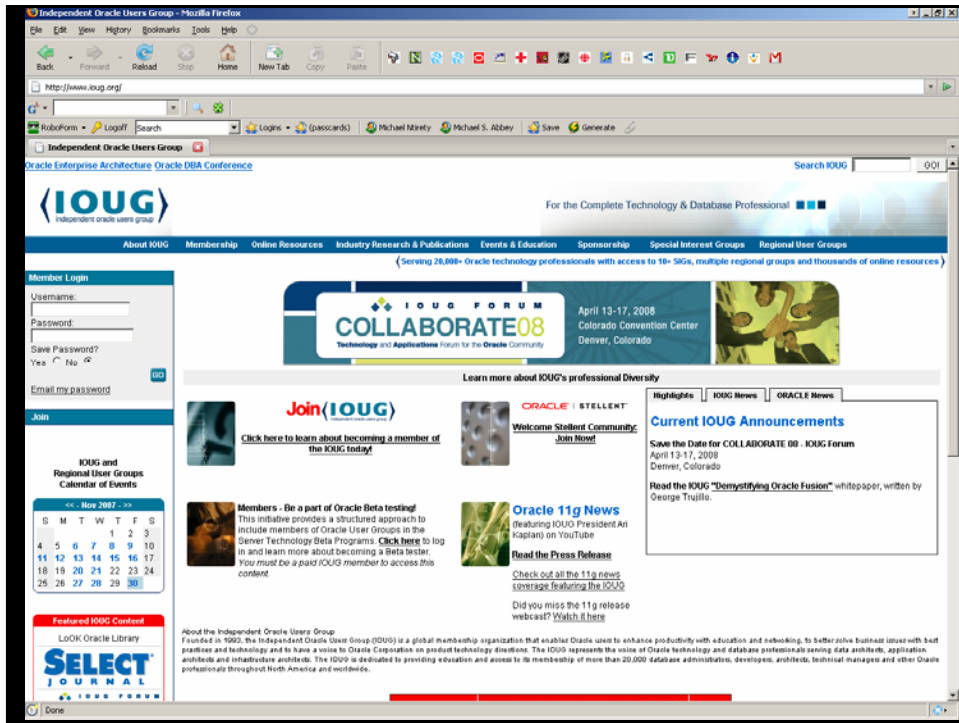
Baby Boomers Are Turning From Workers Into Travelers
Retiring baby boomers and the looming workforce shift

Retiring baby boomers spell opportunity for those to come
By Stacey Barron

Preparing for the Upcoming Worker Shortage As Baby Boomers Retire
By [Anastasia Zoldak](#)

First U.S. baby boomer applies for Social Security

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Current IOUG Announcements
Save the Date for COLLABORATE 08 - IOUG Forum
April 13-17, 2008
Denver, Colorado
Read the IOUG "Demystifying Oracle Fusion" whitepaper, written by George Trujillo.

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Nov 2007						
S	M	T	W	T	F	S
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4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

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