3 Major Trends in the Oracle World
NYOUG - 2005

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CEO, TUSC

The Oracle Experts

This paper will cover

- Oracle in the Fast Lane
- 3 Trends in the Oracle World Today
  - Grid Computing
  - Acceleration of Linux
  - Shifting Labor Trends
- Secret of Success

Why Focus on Oracle:
Oracle… Always in the Fast Lane!

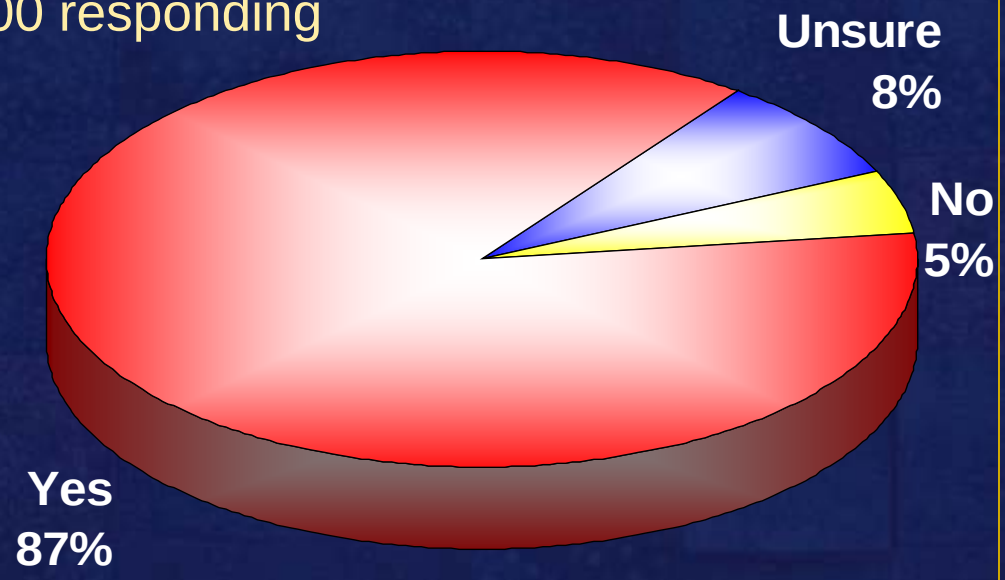
"If everything seems under control, you're just not going fast enough."
- Mario Andretti

Why Oracle?

- Oracle is the leader!
- The Fortune 500 runs their primary systems on the Oracle database. Over 100,000 Oracle DBAs.
- Hundreds of thousands of developers and growing; 2,000,000+ subscribers on technet.
- Block level manipulation of data and memory is a substantial competitive advantage over Microsoft and IBM especially on the Grid.
- Oracle has not been caught from behind in 25+ years!

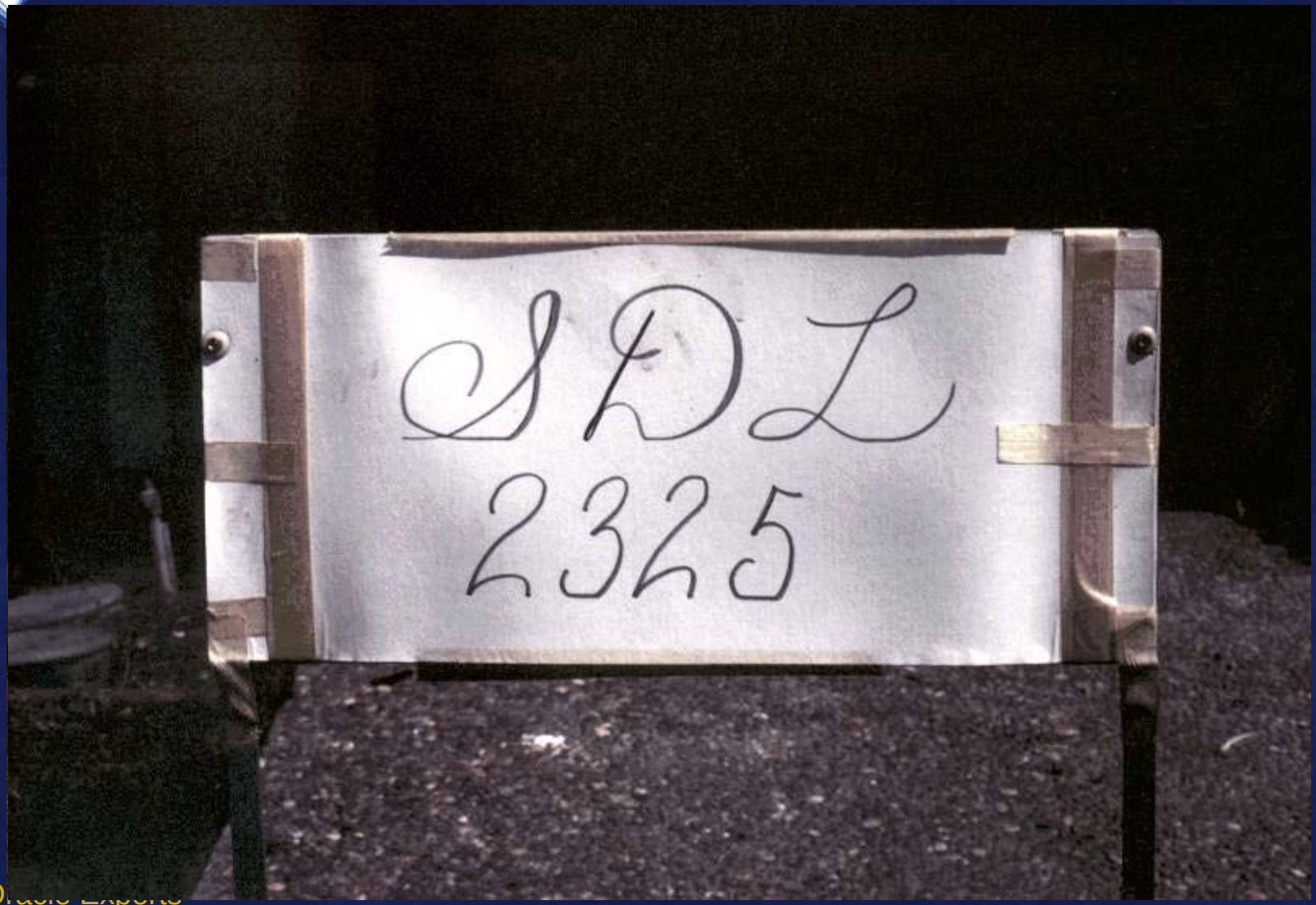
Oracle: Best Database among IOUG

- 87% say yes
  - Over 50% run multiple databases (over 100 different ones)
  - With 36%; Oracle is not primary database provider
  - Still Oracle Wins hands down
  - IOUG Survey of over 400 responding



Source: IOUG / Morgan Stanley

Oracle Corporation – 1st Anniversary



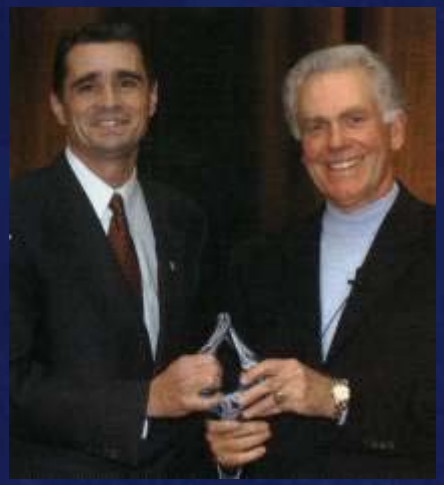
First Corporate Sign for SDL

Oracle Firsts – *Innovation!*

1979 First commercial SQL relational database management system
1983 First 32-bit mode RDBMS
1984 First database with read consistency
1987 First client-server database
1988 First RDBMS with SMP support
1994 First commercial and multilevel secure database evaluations
1995 **First 64-bit** mode RDBMS
1996 First to break the 30,000 TPC-C barrier
1997 **First Web** database
1998 First Database with Native **Java** Support
1998 First database to break the 100,000 TPC-C barrier
1999 First RDBMS ported to **Linux**
2000 First database with **XML**
2001 First middle-tier database cache
2001 First RDBMS with **Real Application Clusters** (June 2001)
2004 First **True Grid Database**

2005 First **FREE Oracle Database** (10g Express Edition)

Oracle Corporation – 25th+ Anniversary



I've Learned as the DBA

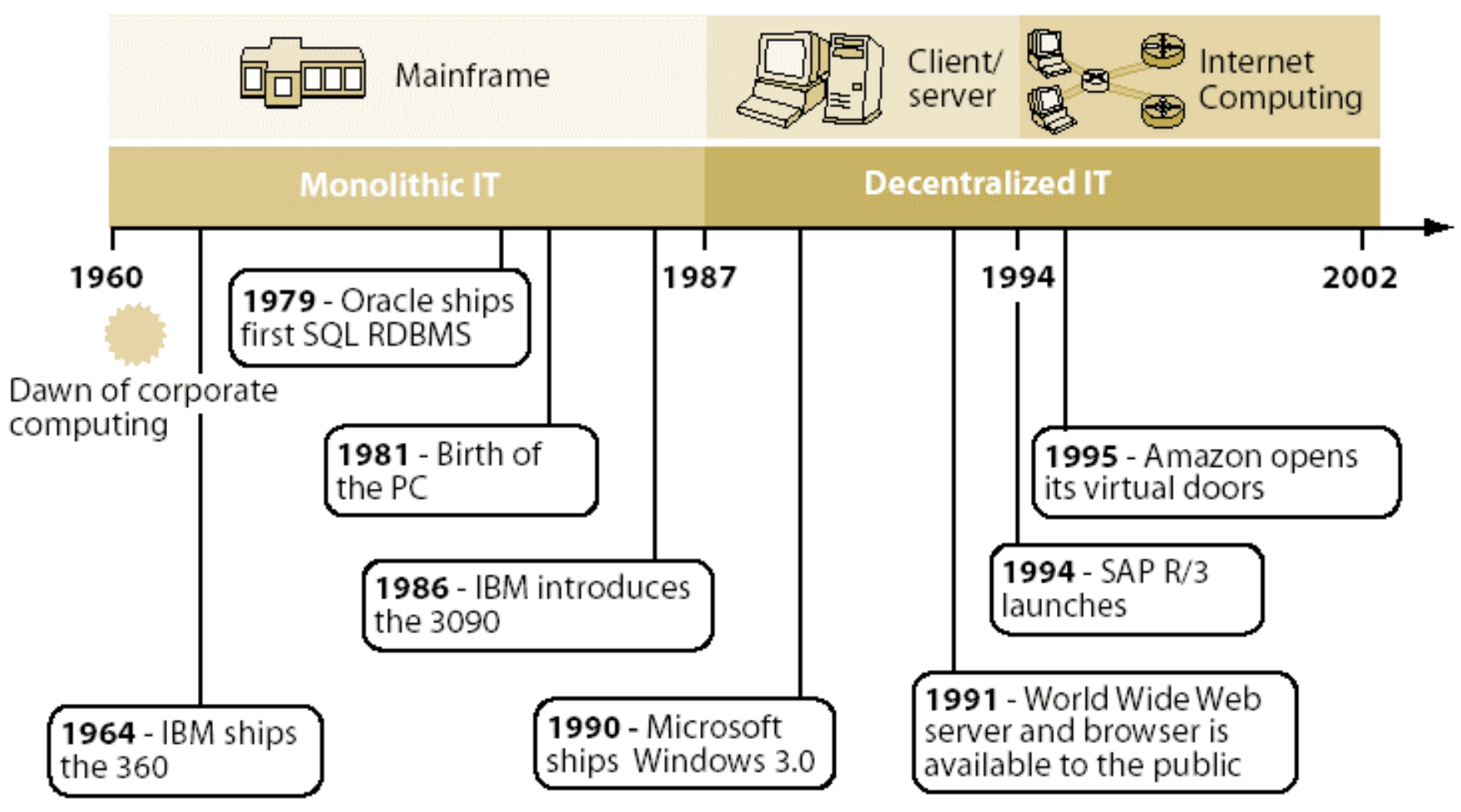
- The flux capacitor doesn't work yet
- Don't use the "rm –r command" in UNIX
- A rollback doesn't work after a drop or truncate
- Shutdown abort is the greatest Oracle command ever
- Don't let developers use Toad!
- Trying all of the combinations in a 10 table join is tough since there are 3,628,800 possibilities
- You need to be able to stay up 63 hours

I've Learned as the Developer

- Future key 4GL is JDeveloper & HTML DB
- Other companies only catch Oracle for a moment or two (case in point: PowerBuilder)
- Execute Immediate instead of open/parse/execute/close
- Autonomous_transaction pragma to commit within
- Use Toad!

- Get DBA privilege
- Alter session set sort_area_size=1000000000;
- Even a developer can tune Oracle on NT

Computing has Shifted from Monolithic to Decentralized



Source: Forrester Research, Inc.

Through History Business Gained at IT's Expense

		Mainframe	Client/server	Internet Computing
Business	Business impact	○	◒	◒
	Speed of delivery	○	◒	◒
	Ease of partnering	○	○	◒
IT	Utilization	●	◒	○
	Ease of integration	●	○	○
	Manageability	●	◒	○

● Strong ◒ Middling ○ Weak

Source: Forrester Research, Inc.

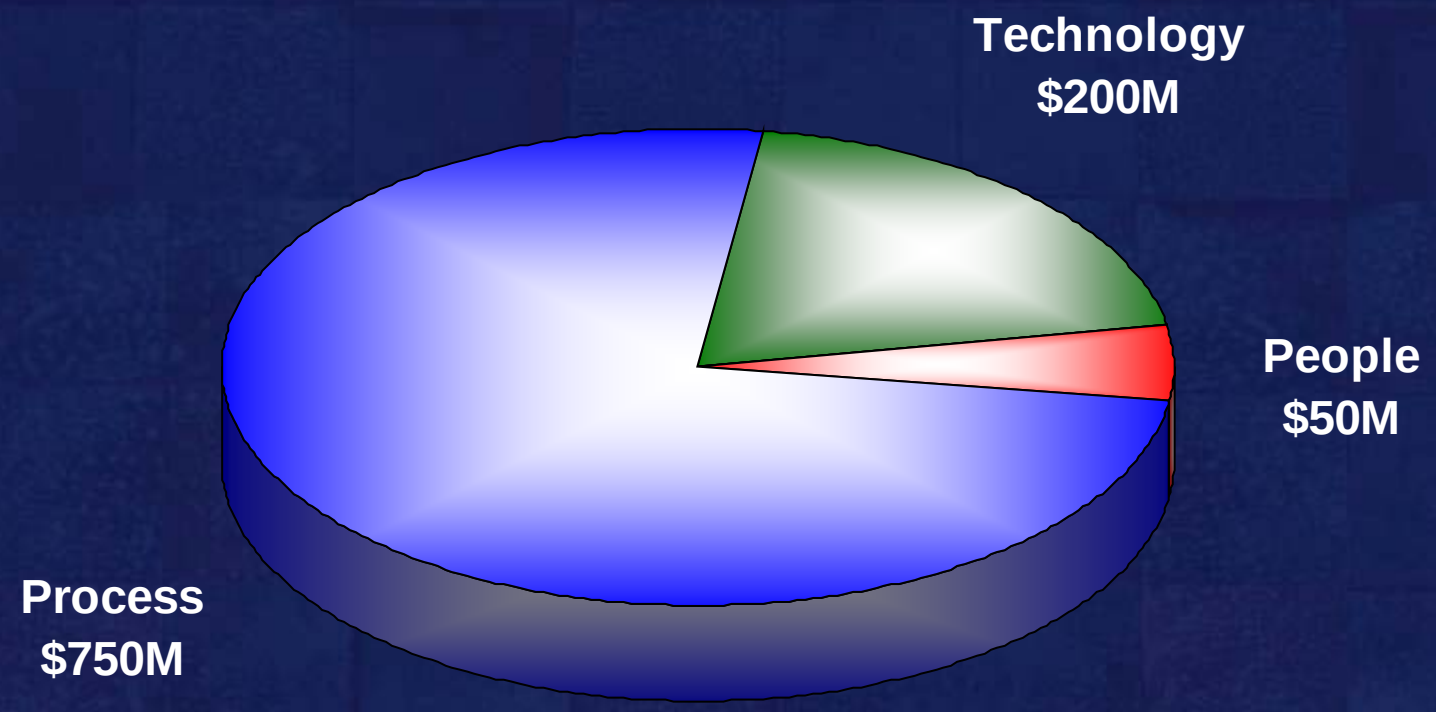
Organic IT Needs

- A single management console / Automated manageability
- Self-healing infrastructure
- Squeeze maximum use out of technology
- Easily integrate applications and business processes
- Infrastructure to handle business problems
- Faster time-to-impact

Forrester Timeline:

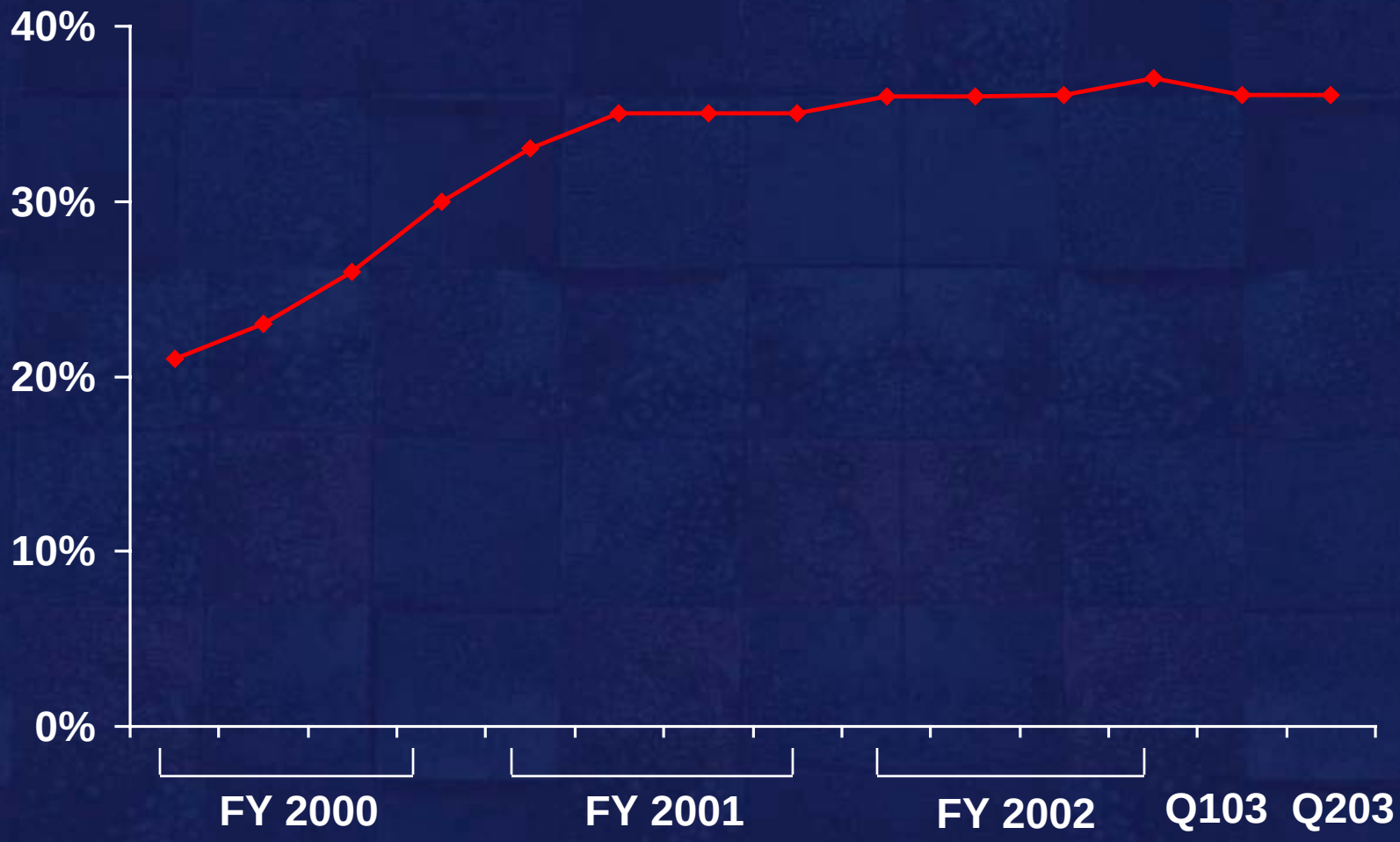
- 2002-2004: Vendor Awakening
- 2004-2005: Mainstream Adoption
- **2006+: Breakaway**

How Oracle saved $1B: CONSOLIDATION! & Process



Operating Margin Improvement

Trailing 12 Month Operating Margin Trend



The Oracle Experts

Note: Oracle Corporation - Ending November 2002

PROJECT FUSION
Protect, Extend, Evolve
Your Applications Investment

Future Goal is to do this for Others:

Oracle and PeopleSoft – Better Together

ORACLE

Oracle Agrees to Buy Siebel

- Vaults Oracle to #1 in Customer Relationship Management
- Together Oracle and Siebel will be our customers' most valued partner

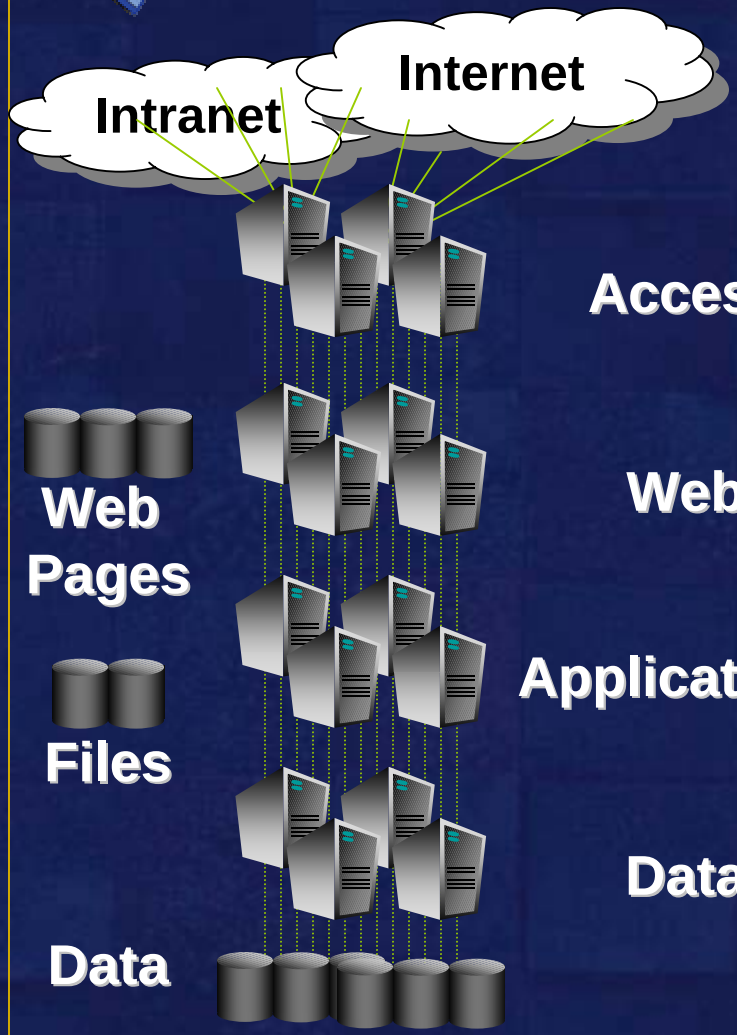
* Rule 425 Disclosure

J D EDWARDS
you > us

Not to be confused with…
Fusion Middleware Acquisitions:

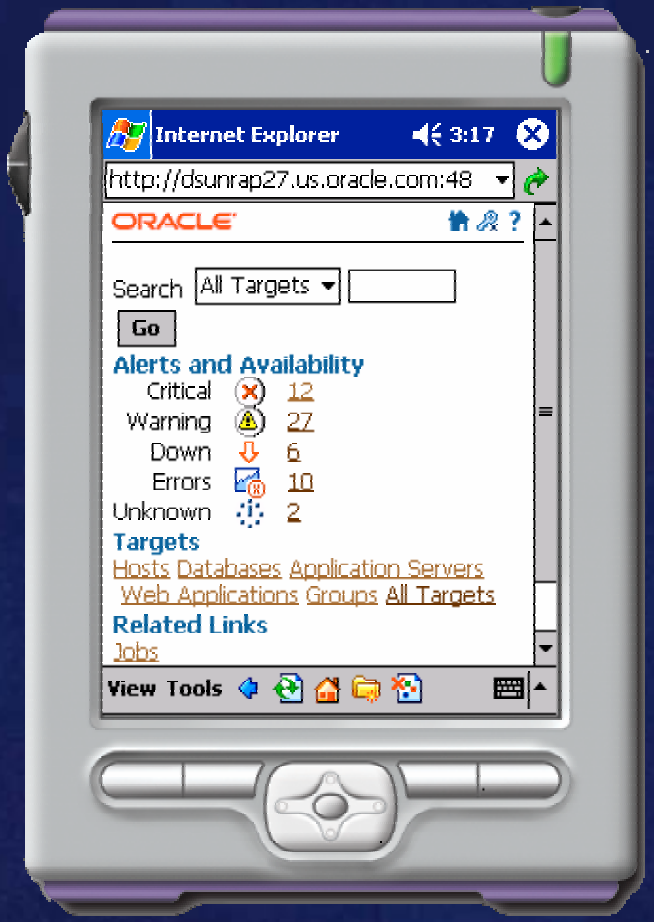
oblix | THOR TECHNOLOGIES | OCTETSTRING

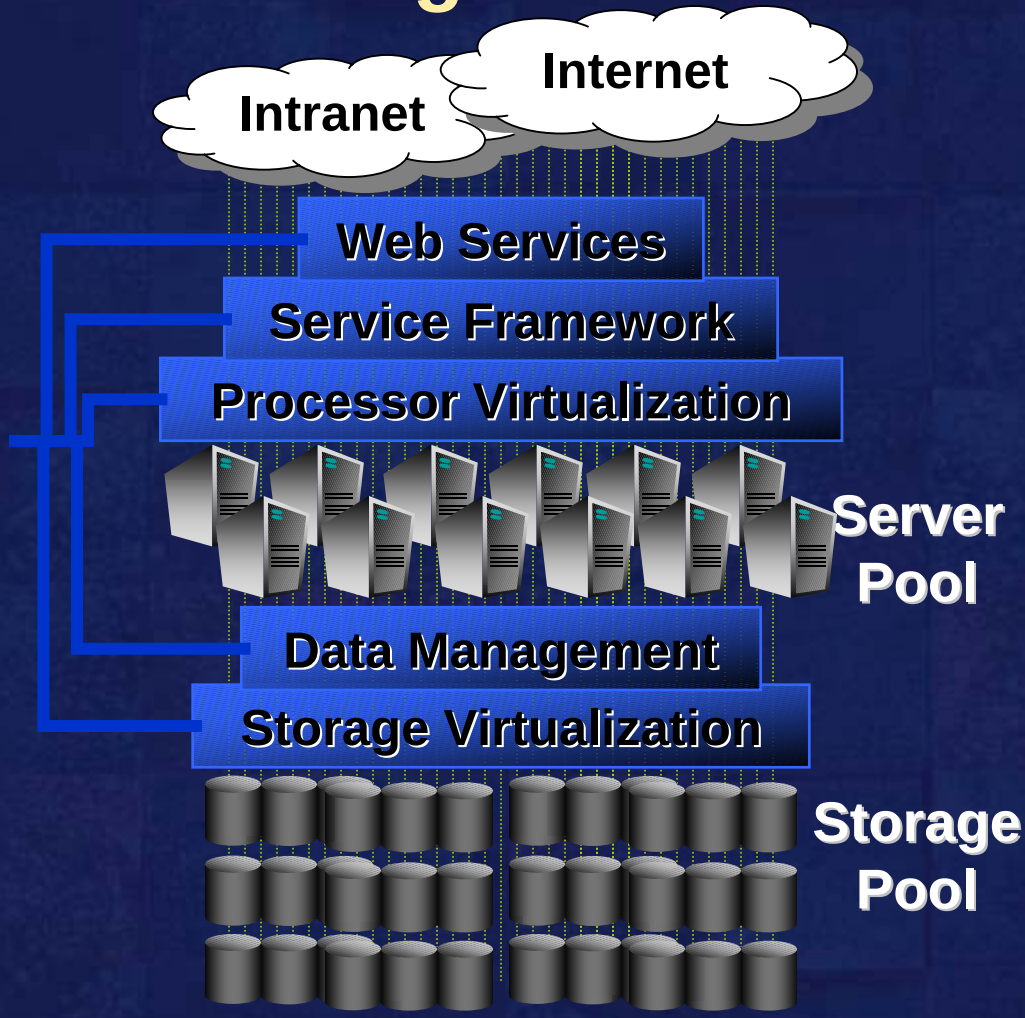
The problem with hardware and system infrastructure



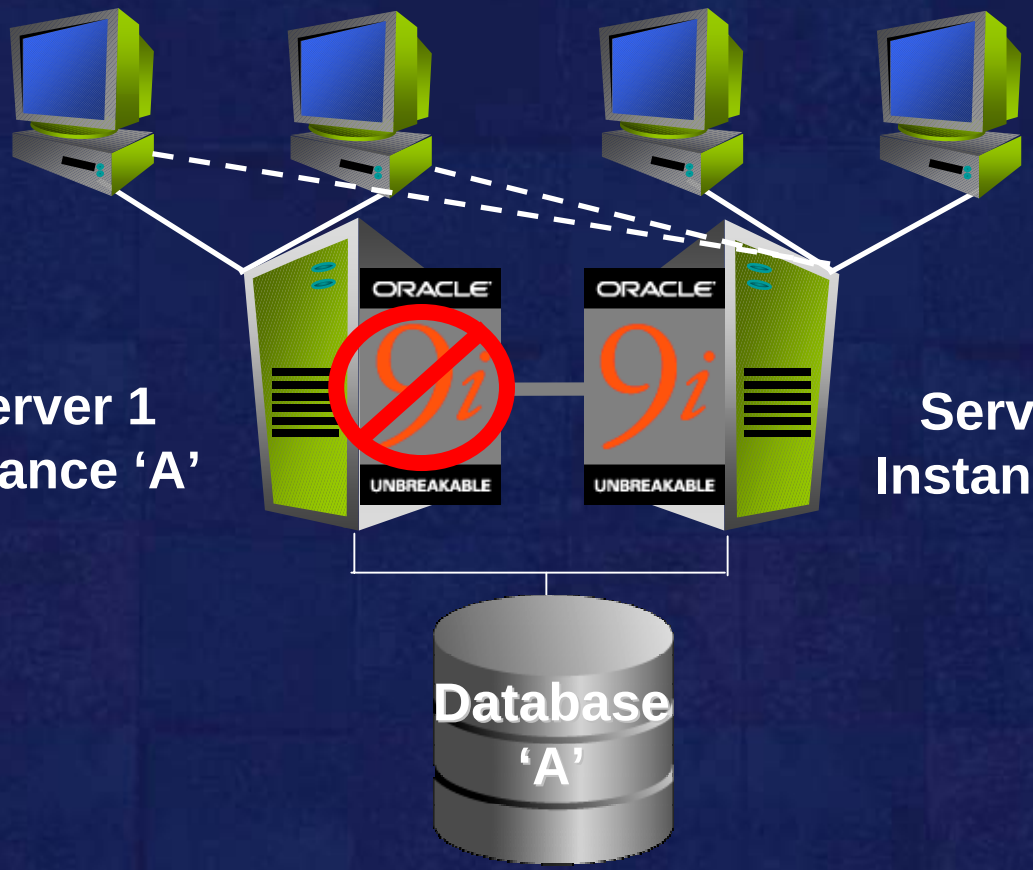
- Islands of Data
- Low utilization of server CPU's
  - Dedicated to an application
  - Utilization often less than 20%
- Low utilization of storage
  - Tied to server
  - Utilization often less than 50%
- Too much labor
- Slow application provisioning

The Future ....
Manage end to end



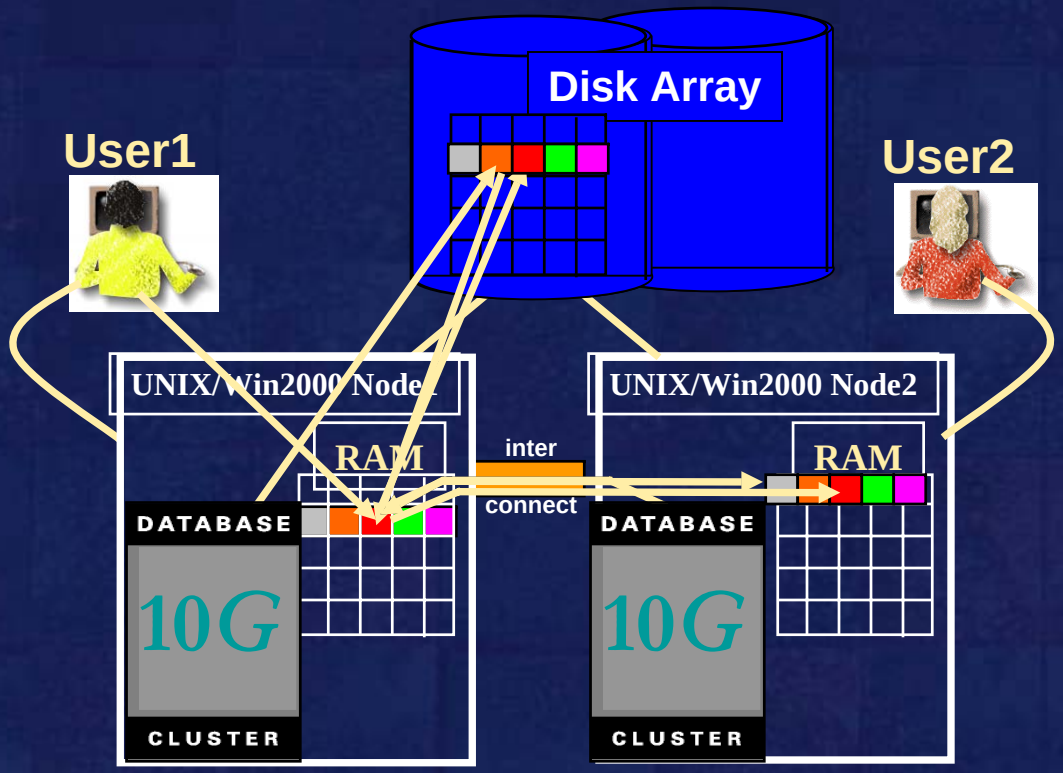


Step 1: Real Application Clusters



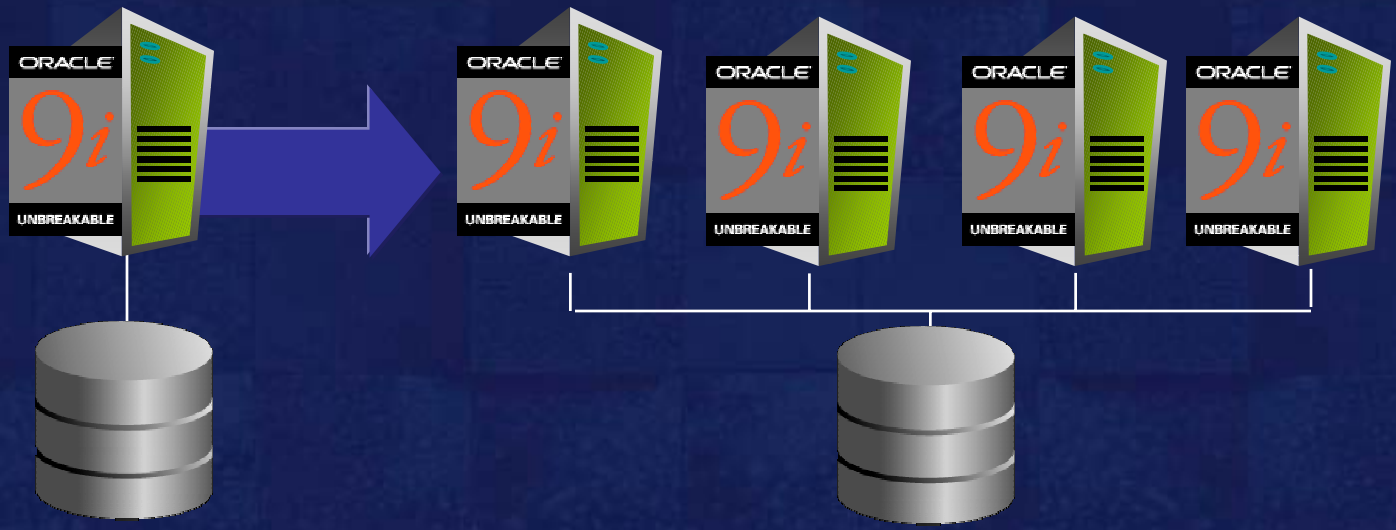
SERVER failure - your database remains available

Real Applications Clusters - Cache Fusion



1. User1 queries data
2. User2 queries same data - via interconnect with no disc I/O
3. User1 updates a row of data and commits
4. User2 wants to update same block of data – 10g keeps data concurrency via interconnect

Step 2 – Grow the Model



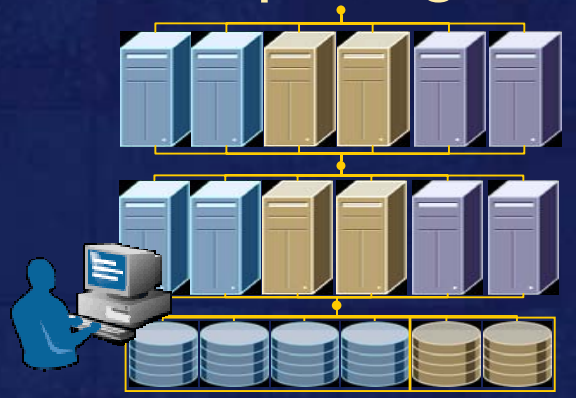
- Start small, grow incrementally
- Scalable AND highly available
- NO downtime to add servers and disk

Step 3: 10g Grid for Consolidation:

Mainframe Model

- Partitioning of one large server
- Built with high quality, high cost parts
- Complete, integrated software
- High quality of service at high cost

Grid Computing Model



- Coordinated use of many small servers
- Built with low cost, standard, modular parts
- Open, Complete, integrated software
- High quality of service at low cost

Oracle DB 10g ULDB – Store ALL Your Data

- Database size limit raised to is 8 Exabytes (8 EB), which is 8 million Terabytes

  5 Exabytes (5 EB)= Every word ever spoken!

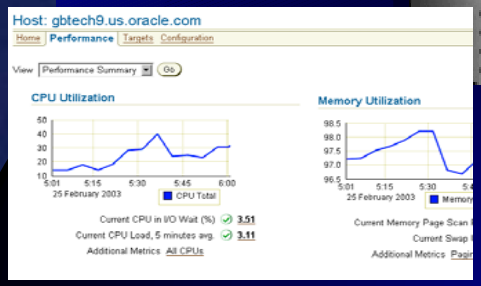
  8-12 Petabytes (.012 EB) = Entire Internet

In ONE oracle Database you could fit:

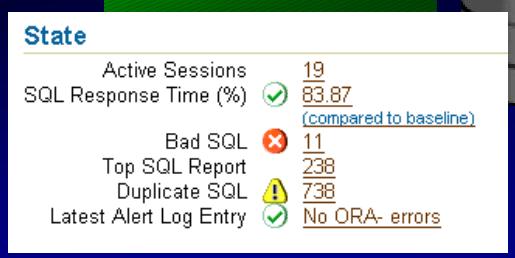
- 1000 Internets (8P each) or
- 400,000 Libraries of Congress (20T each and 17-18 million books in each) or
- 8 Billion Movies on CD (1 G each) or
- 1 Mount Everest filled with Documents (approx.)

Enterprise Manager for the Grid

Host and Hardware



Database

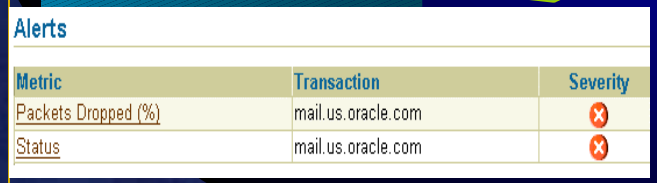


Oracle9iAS

Administration
Monitoring
Provisioning
Security

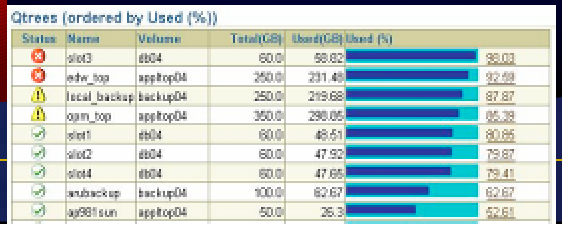
Enterprise Manager

Network and Load Balancer



Applications

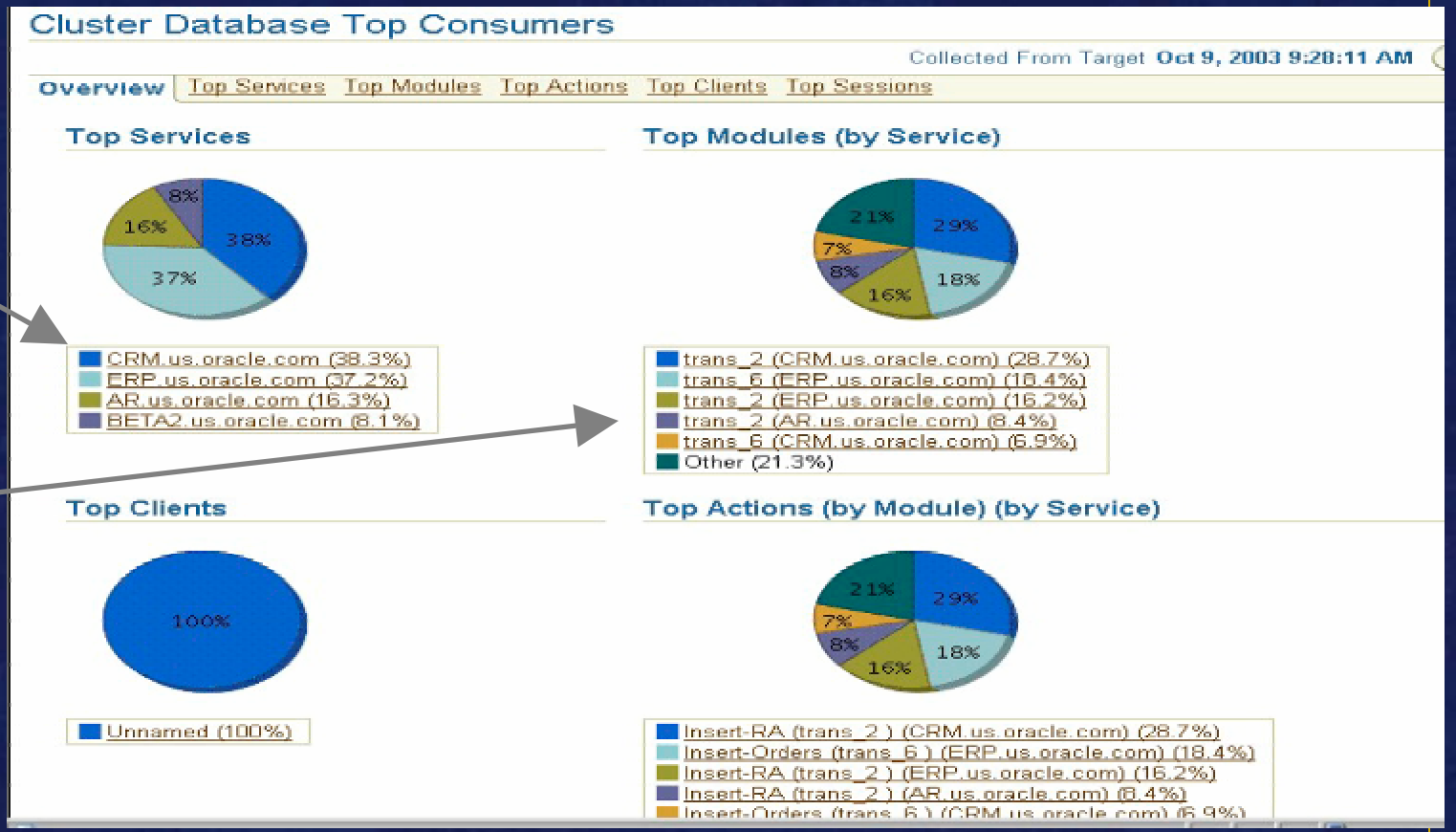
Storage



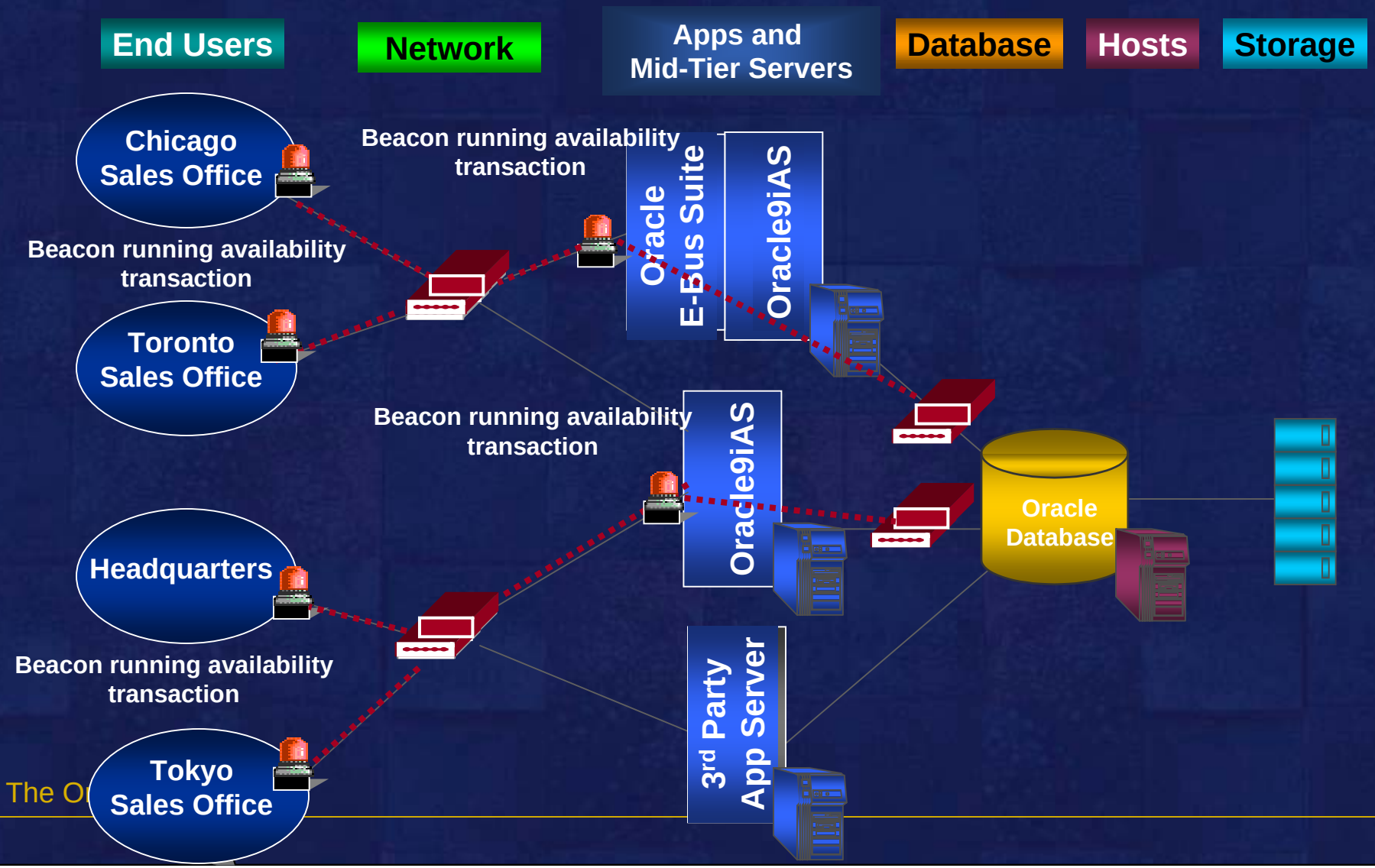
Grid Services - Automatic Workload Management

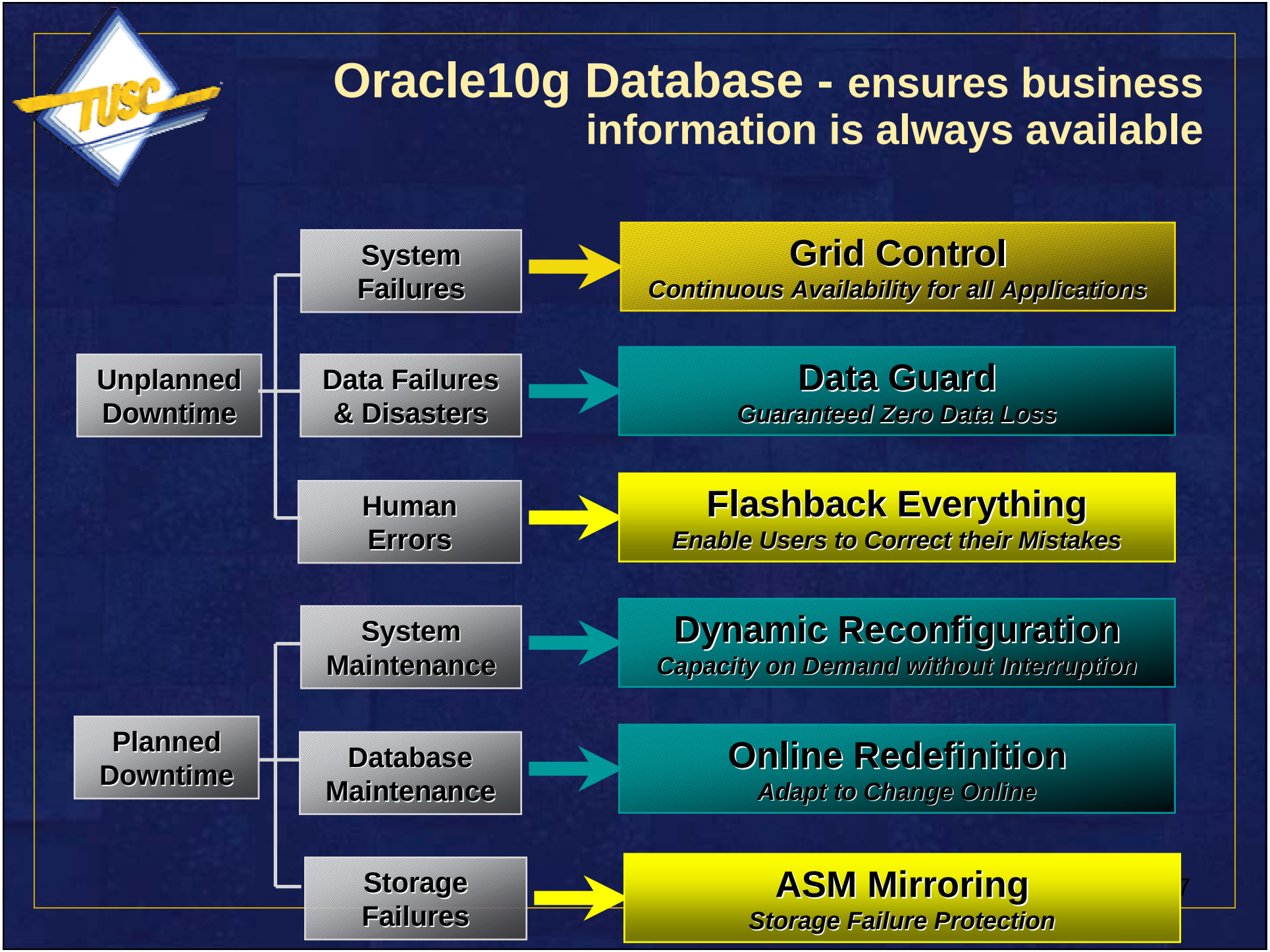
Top Services

Top Modules



Availability Monitoring Topology




Oracle10g Database - ensures business information is always available
Unplanned Downtime
Planned Downtime
System Failures
Data Failures & Disasters
Human Errors
System Maintenance
Database Maintenance
Storage Failures
Grid Control
Continuous Availability for all Applications
Data Guard
Guaranteed Zero Data Loss
Flashback Everything
Enable Users to Correct their Mistakes
Dynamic Reconfiguration
Capacity on Demand without Interruption
Online Redefinition
Adapt to Change Online
ASM Mirroring
Storage Failure Protection

Trend #2
A Shift Toward Linux

"First they laugh at you,

then, they ignore you,

then they fight you,

and Then you win."

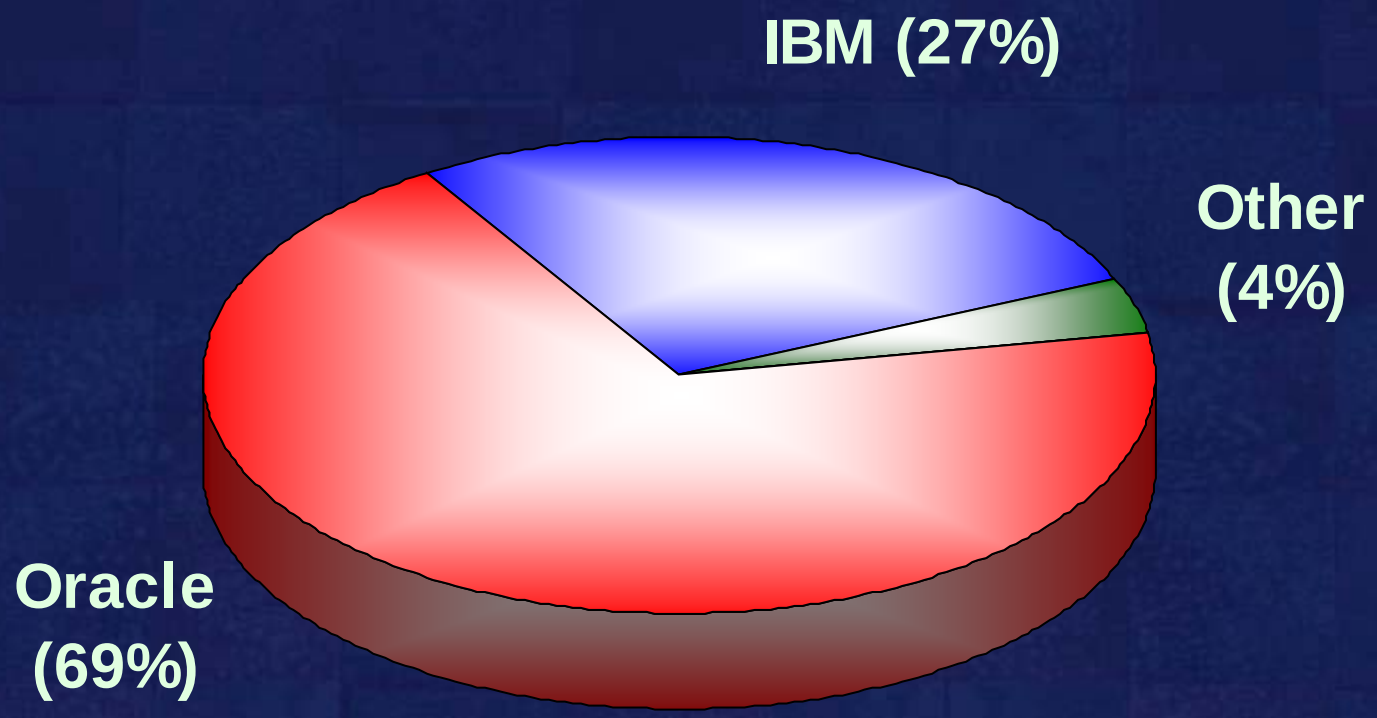
- Mahatma Ghandi

Why Linux?

- Performance via Grid
- Availability via Grid
- Stability via Grid
- Security via Oracle
- Cost Savings via Smaller Servers (Grid)

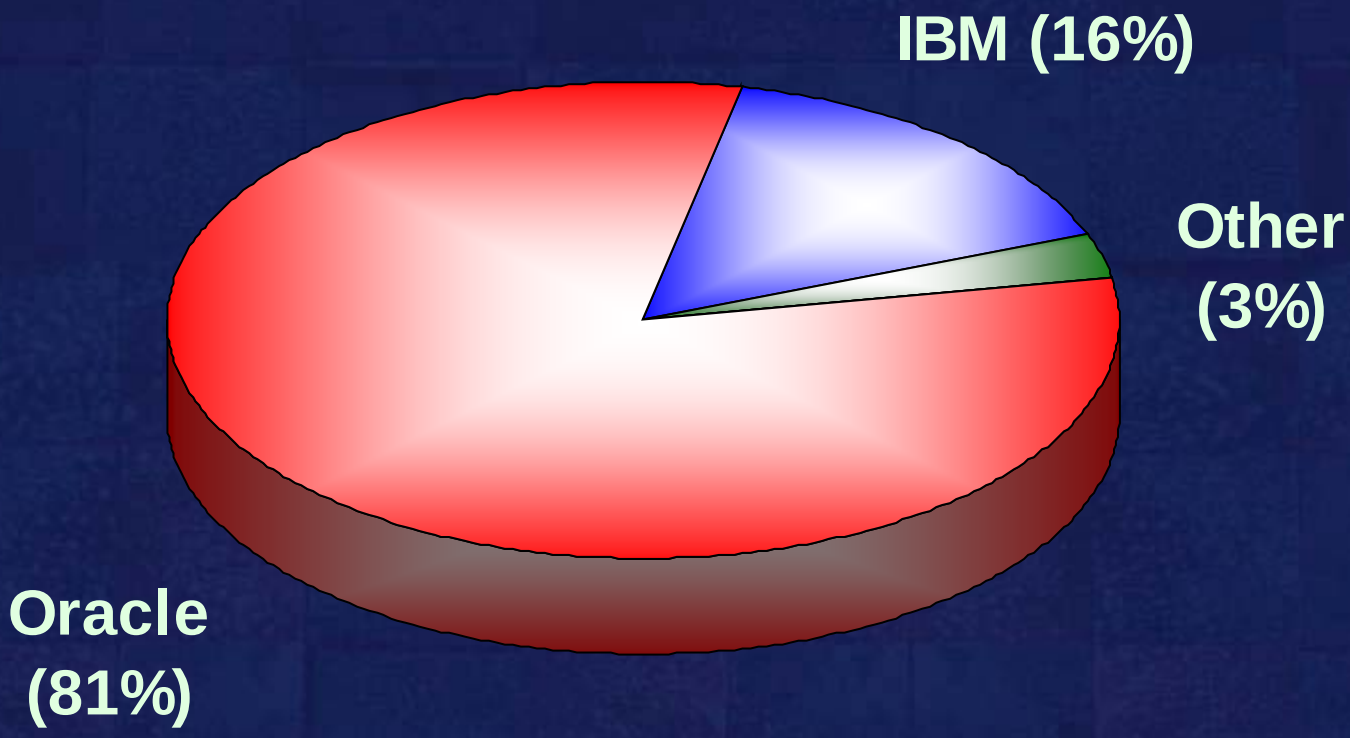
- Larry says so:
  - Companies start building, supporting and creating once Larry charts a bend in the road.

Linux Database Market 2003



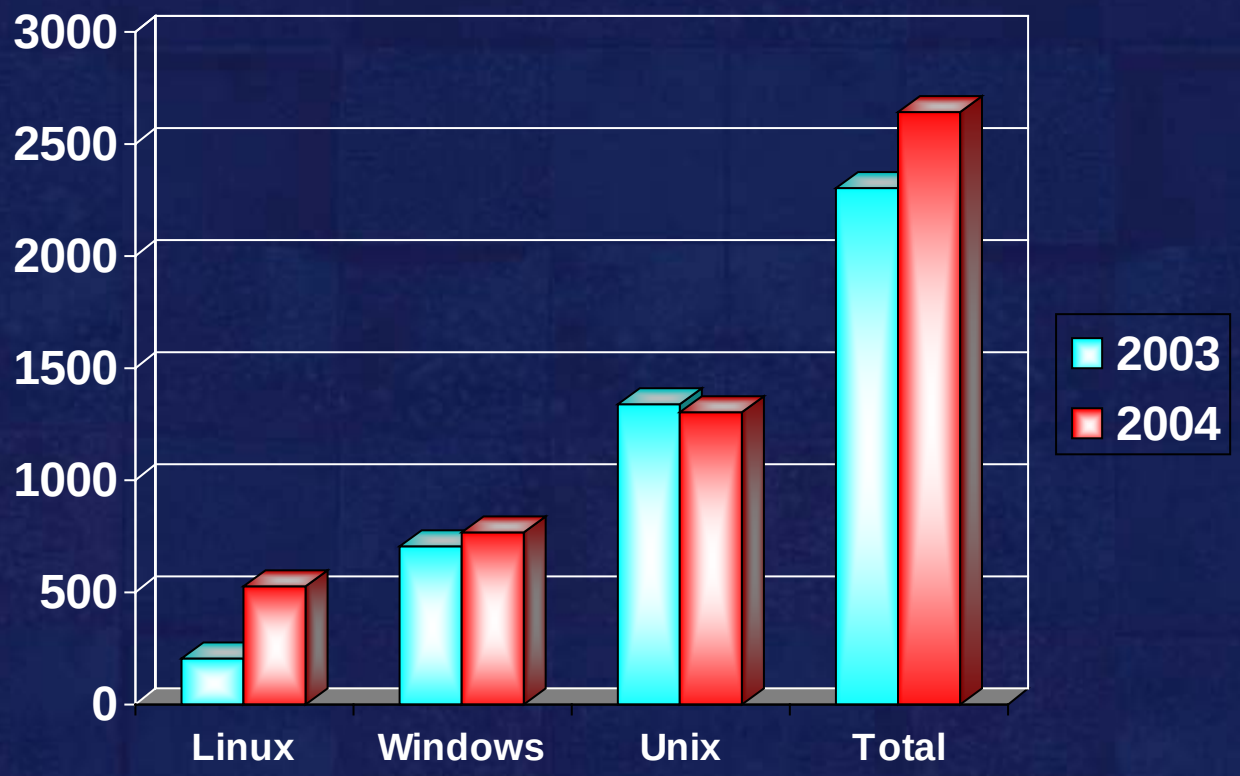
Source: Gartner, May 2005

Linux Database Market 2004



Source: Gartner, May 2005

Oracle Sales Market 2003/2004



Source: Gartner, May 2005

Trend toward Linux

"Moving to Oracle on Linux has exceeded our expectations in terms of performance and cost efficiencies"

- *Michael Kress*, Director of Enterprise Services,
MLT Vacations (largest US supplier of vacation packages)

MLT Vacations Stack

- Red Hat Linux Operating System
- Oracle Database
- Oracle Real Application Clusters (RAC)
- Oracle Data Warehouse

TUSC working with Linux

- Supported an Online E-Commerce site a 4 node 10g RAC cluster on RHEL 3.
- Upgraded standalone / Windows / 8i to 9i RAC on Linux RH Enterprise 3.0.
  (Performance improved quite a bit)
- 9204/RAC database on Red Hat ES 2.0.
- Upgrade from 8.1.7 on SCO to 9.2.x on Red hat ES 2.0.
- Conversion for ERP from 8.1.7/Win32 to 10g on Red Hat 3.0.
- Moving a 3-node RHEL RAC to 6-node.

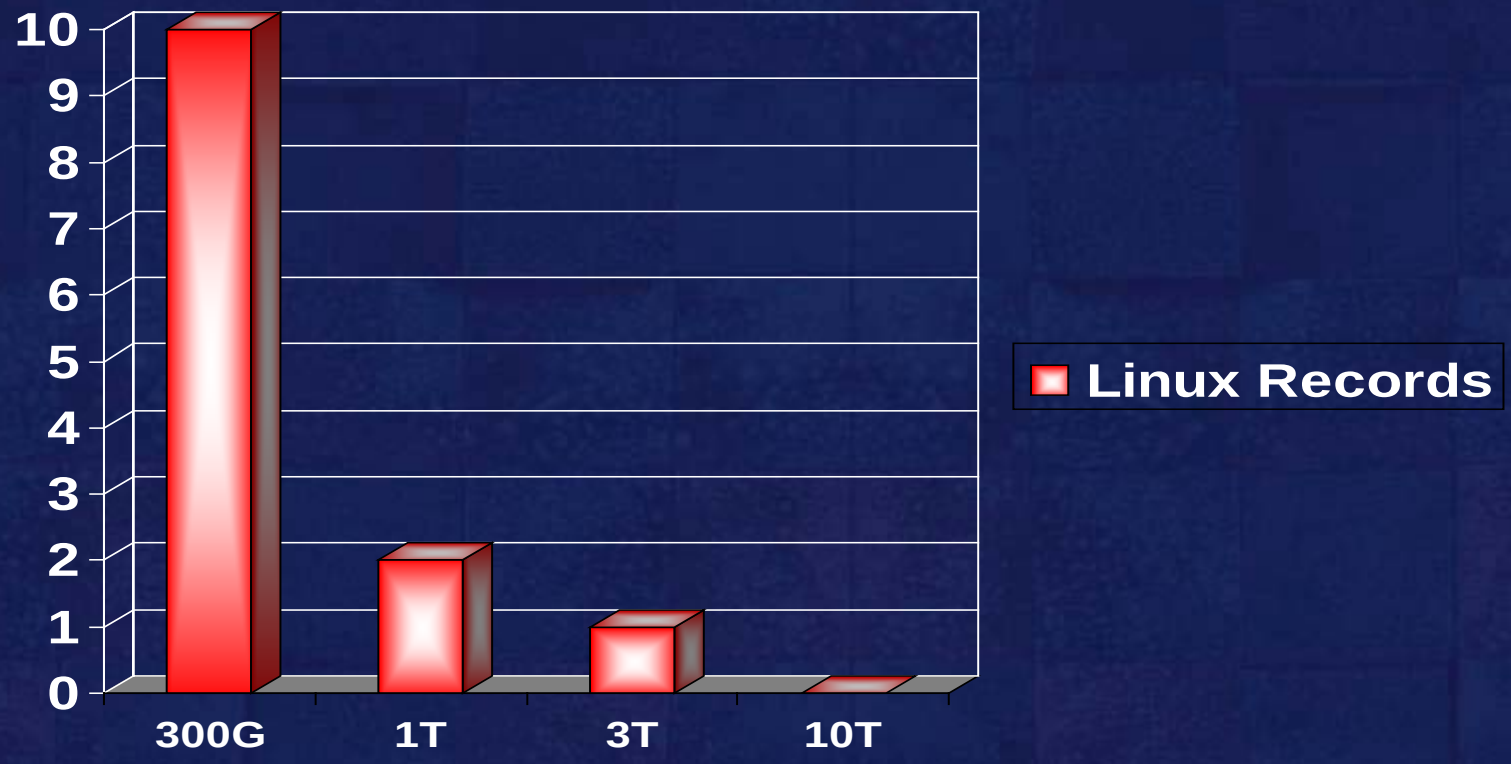
Fastest Database - TPC-H

Size	Database	Hardware	CPU/OS	Cost
300G	Oracle 10g	HP/Proliant	8/RHEL4	524K
1T	Oracle 10g	HP/Superdome	64/HP UX	4.0M
3T	Oracle 10g	IBM/P5 595	64/AIX	5.4M
10T	Oracle 10g	Sun/E25K	72/Solaris	5.8M

"The performance metric reported by TPC-H is called the TPC-H Composite Query-per-Hour Performance Metric(QphH@Size). The TPC Benchmark™H (TPC-H) is a decision support benchmark. **It consists of a suite of business oriented ad-hoc queries and concurrent data modifications.** The queries and the data populating the database have been chosen to have broad industry-wide relevance. This benchmark illustrates decision support systems that examine large volumes of data, execute queries with a high degree of complexity, and give answers to critical business questions."

Source: www.tpc.org (As of December 7, 2005)

Records in Top 10 – TPC-H



Source: www.tpc.org (As of December 7, 2005)

Trend #3
Shift to a Mixed Resource Model

"Vision without action is a daydream.
Action without vision is a nightmare."

- Japanese Proverb

Peter Drucker's 6 Certainties*

- Collapsing Birthrate in the Developed World
- Shifts in the Distribution of Disposable Income
- Growing Incongruence Between Economic Globalization and Political Splintering
- Defining Performance
- Global Competitiveness
- New Information Revolution
  - Data / Information / Meaning & Purpose

** Management Challenges for the 21st Century, Peter Drucker*

Friedman's Dimensions of Understanding Globalization*

- Politics (Merging)
- Culture (Still disparate)
- Technology (Merging/Merged)
- Finance (Merging/Merged)
- National security (Disparate)
- Ecology (Merging)

** The Lexus and the Olive Tree; Understanding Globalization, Thomas Friedman*

Waves of Acceleration!

Country	Time to Oust Ruling Communist Govt.
Poland	10 Years
Hungary	10 Months
E. Germany	10 Weeks
Czechoslovakia	10 Days
Romania	10 Hours

"Human history becomes more and more a race between education and disaster."

- HG Wells

Ways to Determine Knowledge Worker Productivity*

- We ask the question: "What is the task?“ - Measure
- Knowledge workers have to manage themselves.
- Continuing innovation has to be part of the work.
- Requires continuous learning & teaching
- Productivity not just quantity; Quality is as important
- Knowledge worker is seen/treated as “asset” not a “cost.”

20th-century company – Key asset was production equipment

21st-century institution – Key asset is workers & productivity

** Management Challenges for the 21st Century, Peter Drucker*

IT Is Under Scrutiny

- Too much complexity
- Lots of labor
- Under-utilized capital
- Vulnerable infrastructure
- Hard to set service levels
- Un-gated demand

Inefficient, Unresponsive, Unaligned

Off Shore Model

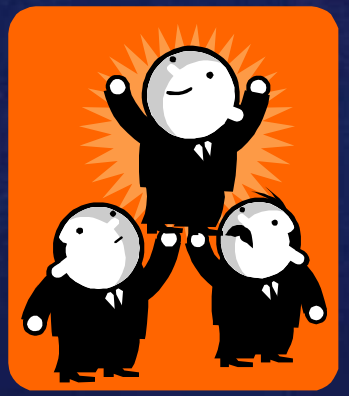
- Savings takes time
  - Usually realized after 3-4 years
  - Hidden costs often not counted in success stories
  - Outsourcer still has to be managed – “Off-shore Baby Sitters”
- Service level interpretation is costing companies
  - Overall expectations not being met
  - Differences in measurement and remediation
- Security a major consideration
  - Piracy and confidentiality issues
- Not really the easy cost relief expected
  - Still need cost reductions to compete
  - Need a better solution!

New “Mixed” Model

- Large Companies
  - Large IT Staff manages systems and leaders drive business goals
  - Outside firm used for expert level “boutique” specialized work
  - Outside firm used for augmentation with large projects on site
  - Off-shore work for repetitive conversion and “boxed” tasks
- Mid-Sized Companies
  - Minimal IT Staff levels drive business goals and growth projects
  - Outsource firm does maintenance tasks and repetitive tasks
- Small Companies
  - Business Goals driven from inside the company with no IT staff
  - Applications are “bought not built” and rarely customized
  - Outsource maintenance and all IT related tasks
- Cost relief
  - Strategic items are done by in-house resources with expert influence
  - Limited inside maintenance or repetitive work

Summary

- Oracle in the Fast Lane
- 3 Trends in the Oracle World Today
  - Grid Computing
  - Acceleration of Linux
  - Shifting Labor Trends
- Secret of Success



Thanks for Coming!

"The strength of the team is each individual member…the strength of each member is the team."

--Phil Jackson

Teamwork!

Fact 1: When you see geese flying in a "V" formation, did you know that as each bird flaps its wings, it creates uplift for the bird immediately following. By flying in a "V" formation, the whole flock **adds at least 71% greater flying range** than if each bird flew on its own.

Lesson 1: People who share a common direction and sense of community can **get where they are going quicker and easier** when they work or travel on the thrust of each other, rather than working solely by themselves.

Teamwork!

Fact 2: When a goose falls out of formation, it suddenly feels the **drag and resistance of flying alone**; therefore, it quickly moves back into formation to take advantage of the **lifting power that the team provides**.

Lesson 2: If we have as much sense as a goose, we **stay in formation** with those headed where we want to go. **With teamwork, everything becomes easier**.

Teamwork!

Fact 3: When the lead goose tires, it rotates back into the formation to **take advantage of the lifting power of the flock** working together.

Lesson 3: As with geese, **people are interdependent on each other**'s skills, capabilities, and unique arrangements of gifts, talents, or resources.

Teamwork!

Fact 4: The geese flying in formation **honk to encourage those up front** to keep up their speed.

Lesson 4: We all need to **make sure our honking is encouraging**. The power of encouragement is a strong attribute of teamwork.

Teamwork!

Fact 5: When a goose gets sick, wounded or shot down, **two geese drop out of formation and follow it down to help and protect it.** They stay with it until it dies or is able to fly again.

Lesson 5: If we had as much sense as geese did, we would **stand by each other in difficult times** as well as when we are strong.

"The strength of the team is each individual member…the strength of each member is the team."

--Phil Jackson

Thank You for Coming!

- Neither TUSC nor the author guarantee this document to be error-free. Please provide comments/questions to rich@tusc.com.
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ORACLE
PartnerNetwork
* PARTNER OF THE YEAR 2002
Internet Platform

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References

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- Mark Hasson, PSU; Global Pricing and International Marketing
- CEO Update: Database Management is Changing, *Transformation is a better option than outsourcing,* Sponsored by Computer Associates with Rich Niemiec & Steve Lemme
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