



Fusion: The New Frontier Oracle Administration in the Future

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CA

NoCoug May 17th, 2007

Meet Your Speaker - Steve Lemme



Steve Lemme is a Director of Product Management at CA for [CA Database Management](#) product solutions. Mr. Lemme joined CA upon its acquisition of Platinum Technology International, Inc. where he was responsible for product management and marketing. Previously, he held positions in product management, marketing, research and development, IT data center operations and support while at Allied Signal, Apple Computer, GTE and Motorola.

Mr. Lemme is author of the book "[Implementing and Managing Oracle Databases](#)" and is an accomplished systems architect and Oracle Master DBA, with more than 15 years experience in distributed database architecture and internet computing. He served 6 years as a Director on the International Oracle Users Group board, Vice President of the Arizona Oracle Users Group.

Steve is a regular speaker at IT industry conferences worldwide and a monthly columnist for [Database Trends and Applications Magazine](#). Steve is the author of the [CA Oracle Data Dictionary Poster](#)

Steve's background includes: Sarbanes-Oxley 404 and Regulatory Compliance as it applies to IT. CobiT controls for databases and IT risk mitigation. Six Sigma, ISO and SEI project expertise. System Infrastructure Architecture Design for mission critical 24x7 availability. Expertise with multi-tiered Application Performance Management. Best Practices for RDBMS consolidation and multi-database management. Professional IT trainer. Oracle License Management. IT Outsourcing. Data Center Management. Disaster Preparedness & Recovery

Abstract

- Possibly an executive or even a co-worker in your company considers Oracle still just a database company. And if it is someone within your management chain, it might be impacting your role without your knowledge of it
- Oracle technology continues to change as well as its use and management. Database growth, business and Services Oriented Architecture continue to alter the role of the Oracle Administrator
- Attend this presentation and learn how Fusion Middleware is changing the role of the database administrator as well as other technology professionals. New technology presents new opportunity if you are prepared to take advantage of it

This Session Is About

- What you need to be considering forward as a DBA
 - In respect to Oracle Fusion Middleware and Applications
 - As a manager when planning projects
- Where to find out more

- **Goal**
 - **Learn one item you can take action to improve your own or companies deployment or efficiency**

Database Management Systems

- One of the most complex software to install and manage
- Amplified by criticality and accessibility of data stored within them of which business operations and decisions could not be accomplished
- There are approximately 265,000 DBA's worldwide
 - Each DBA manages on average a terabyte of data
 - By 2012 DBAs will be spending a lot of their time on architecture and implementation to support database virtualization
 - <http://geospatial.blogs.com/geospatial/2006/11/index.html>

Ancestry

- An evolution from data files to databases
- Oracle, a database company
 - To have the best database
 - Companies purchased it by functional need
 - Administrators were needed
- Over time, more functionality, more management
 - Work on manageability
 - Oracle also has an ERP
- The Internet era
 - Databases accessible via the web
 - The rise of the Application Server

Application Enlightenment

- From Internet to Web Services
- Enabling business processing and data services
- Acquisition, Acquisition, Acquisition...
- Web service reuse versus replacement, SOA
- From Database, to Application, to Software as a Service
- No longer a competition of database technology
- Manage applications infrastructure and business processes linkages

Fusion Strategy

- Applications
 - Peoplesoft, Siebel, eBusiness Suite, JD Edwards and more...
- Middleware
 - Oracle Application Server and Tools
 - Oracle Business Intelligence
 - Oracle Business Process Analysis Suite
 - Oracle Data Integrator
 - Oracle Enterprise Content Management
 - Oracle Identity & Access Mgmt Suite
 - Oracle Service Delivery Platform
 - Oracle SOA Suite
 - Oracle Webcenter Suite
 - And more...

Oracle No Longer DB Centric

- JD Edwards

- Customers choose tools, database, middleware from partner vendors or choose Oracle's.
- Support for existing database alternatives—IBM DB2 Universal Database and Microsoft SQL Server—continues.
- www.oracle.com/applications/technology-foundation-enterpriseone-datasheet.pdf

- Peoplesoft

- Development leads plan to deliver PeopleSoft Enterprise products and maintain our commitment to support PeopleSoft Enterprise applications beyond release 9 on existing platforms, including IBM DB2, SQL Server, Informix, and Sybase.
- http://www.oracle.com/applications/PeopleSoftEnterprise_Withoutsalutation.pdf

- Are PeopleSoft, Siebel, Retek, and i-Flex customers being forced to use the Oracle Database exclusively?

- No, Oracle is continuing to support non-Oracle databases for all product lines.
- Will you continue to support customers running IBM DB2, Microsoft SQL Server, or other relational databases?
- Yes, we plan to maintain currently supported hardware platforms, databases, and operating systems. <http://www.oracle.com/applications/apps-strategy-faq.pdf>

Oracle Applications

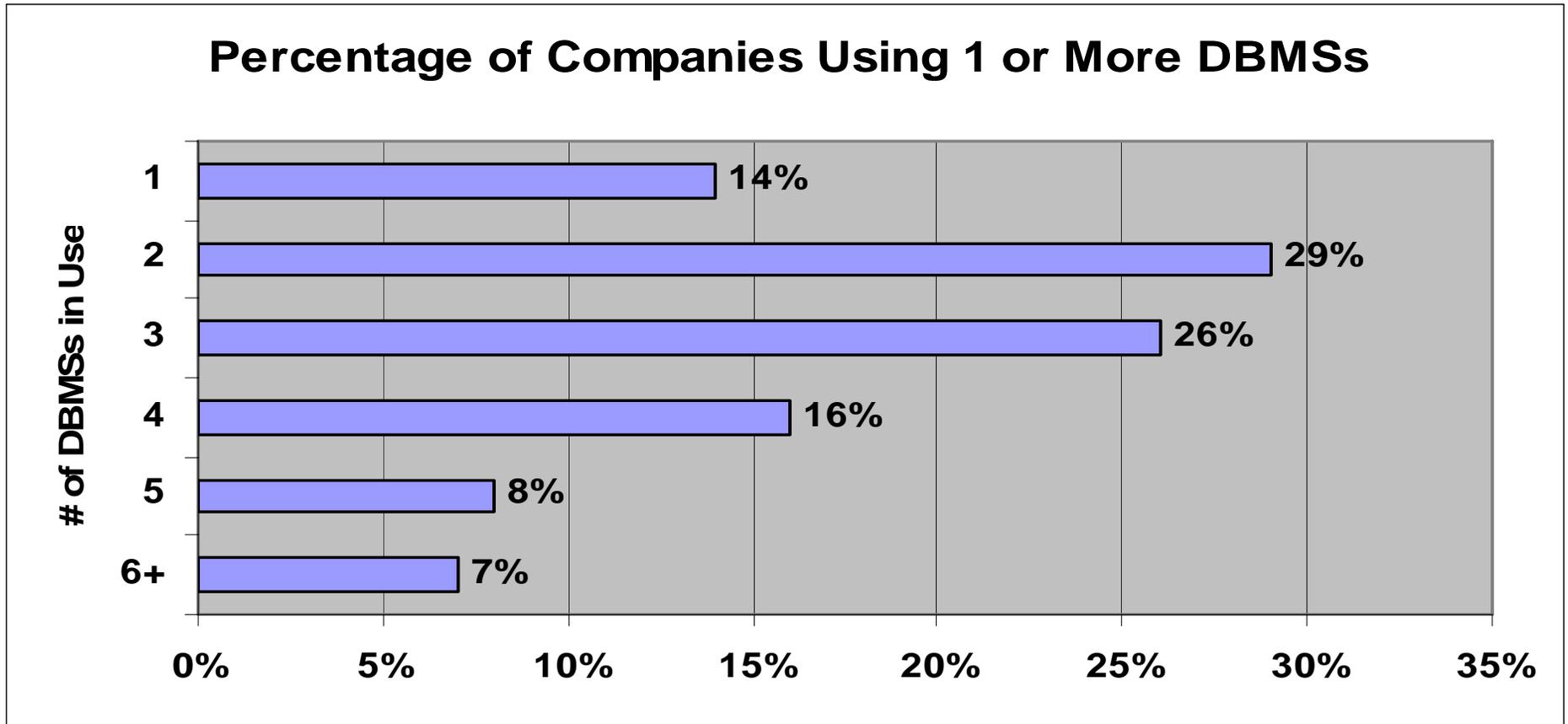
4. What are the expected technology infrastructure choices for the database for the next releases of each product line?

Oracle Product Lines	IBM DB2/zOS	IBM DB2 UDB	IBM DB2 400	IBM Informix	MSFT SQL Server	Oracle 10g	Sybase
PSFT Enterprise 8.9	✓	✓		✓	✓	✓	✓
PSFT Enterprise 9.0	✓	✓		✓	✓	✓	✓
JD Edwards EnterpriseOne 8.11		✓	✓		✓	✓	
JD Edwards EnterpriseOne 8.12		✓	✓		✓	✓	
JD Edwards World A7.3			✓				
JD Edwards World A8.1e			✓				
Oracle E-Business Suite 11i.10						✓	
Oracle E-Business Suite 12						✓	
Oracle Fusion Applications	*	*	*	*	*	✓	

* Decision pending.

<http://www.oracle.com/applications/apps-strategy-faq.pdf>

Heterogeneity



2006 survey of IOUG members

Service Oriented Architecture

- **S**ystems exposing & providing access to functions and data
- **O**pen interoperable protocols
- **A**rchitecture of connected systems offering shared services
 - Standards based Web Services
 - Loosely coupled to application processes, subscriber unaffected by changes by the publisher for flexibility and resiliency
 - Decouple hard-wired one-to-one relationships and encapsulate legacy business logic and repurpose
 - Enables reuse of existing systems as service providers

Service Oriented Architecture

- Away from proprietary application stacks
 - Composite applications
 - Leverage infrastructure to lower cost of obtaining new functionality
- Interoperability
 - Two or more applications able to exchange information
 - Reusability
- Heterogeneity
 - Application Server services
 - Database services
- Across highly available
 - Networks
 - Systems
- Increased importance of Service Availability across the infrastructure

Service Oriented Management

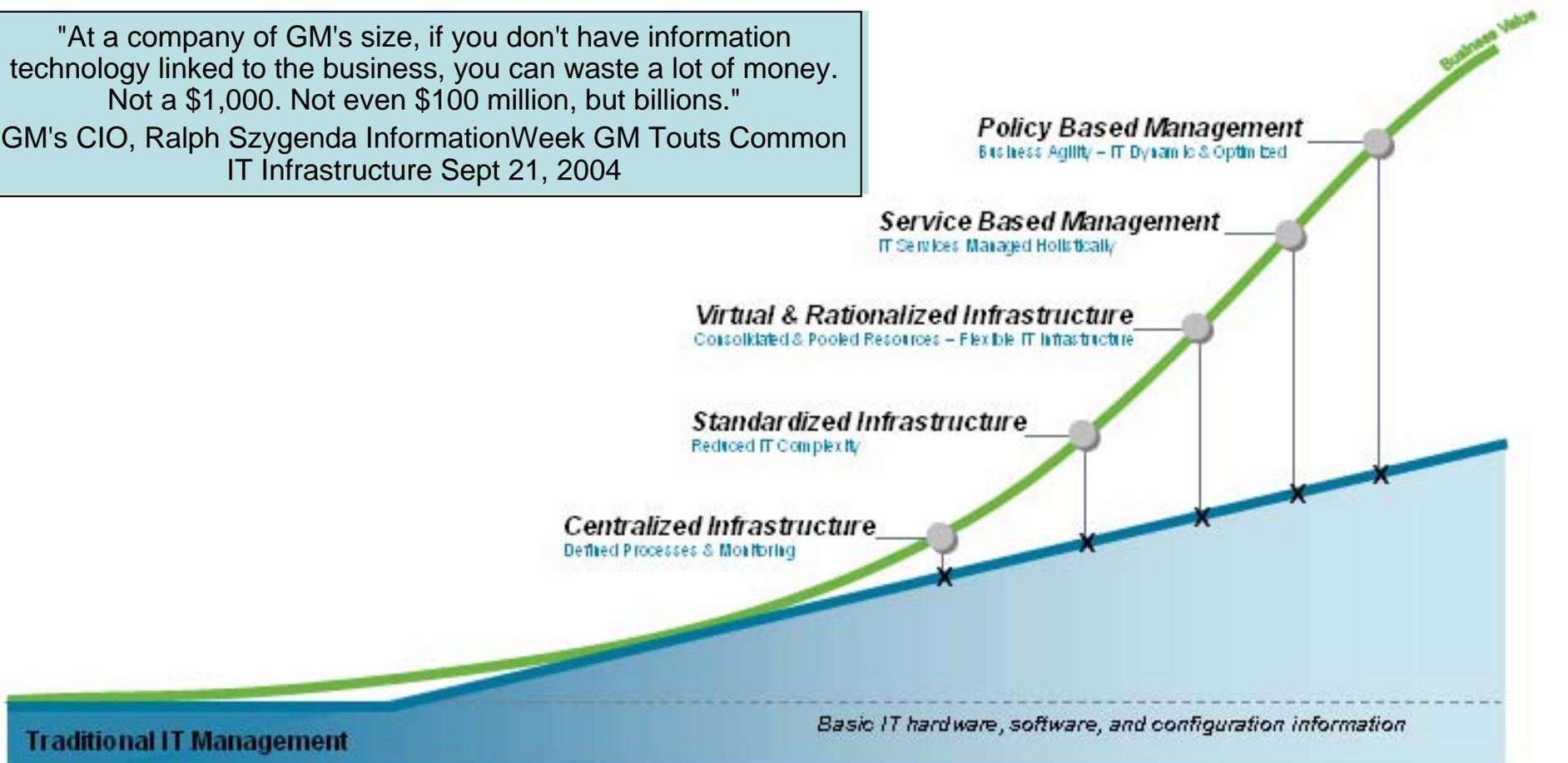
- Standards and repeatable processes
 - Processes for change management and exceptions
 - Following Industry Best Practices
 - Process for new technology review for improvement
- Measurable work
 - Collect metrics, establish baselines, note variances
 - Provide cost breakdowns by application in terms of
 - Trouble-tickets, time to respond, repair, and MTBF
 - Of database and associated infrastructure resources (CPU, disk etc.)
 - Fact driven service measurement prevents over-provisioning
 - Sponsors know systems measured, controlled, and optimized
- Locate and reorganize groups specialized by technology not reporting to a common IT structure
 - Well-defined roles and responsibilities documented
 - Business Managers paired with IT teams
 - Company owns the technology, not one group



Investment in IT Maximized

- Business value grows with ability to deliver agile, high-quality IT services at lower, business driven cost

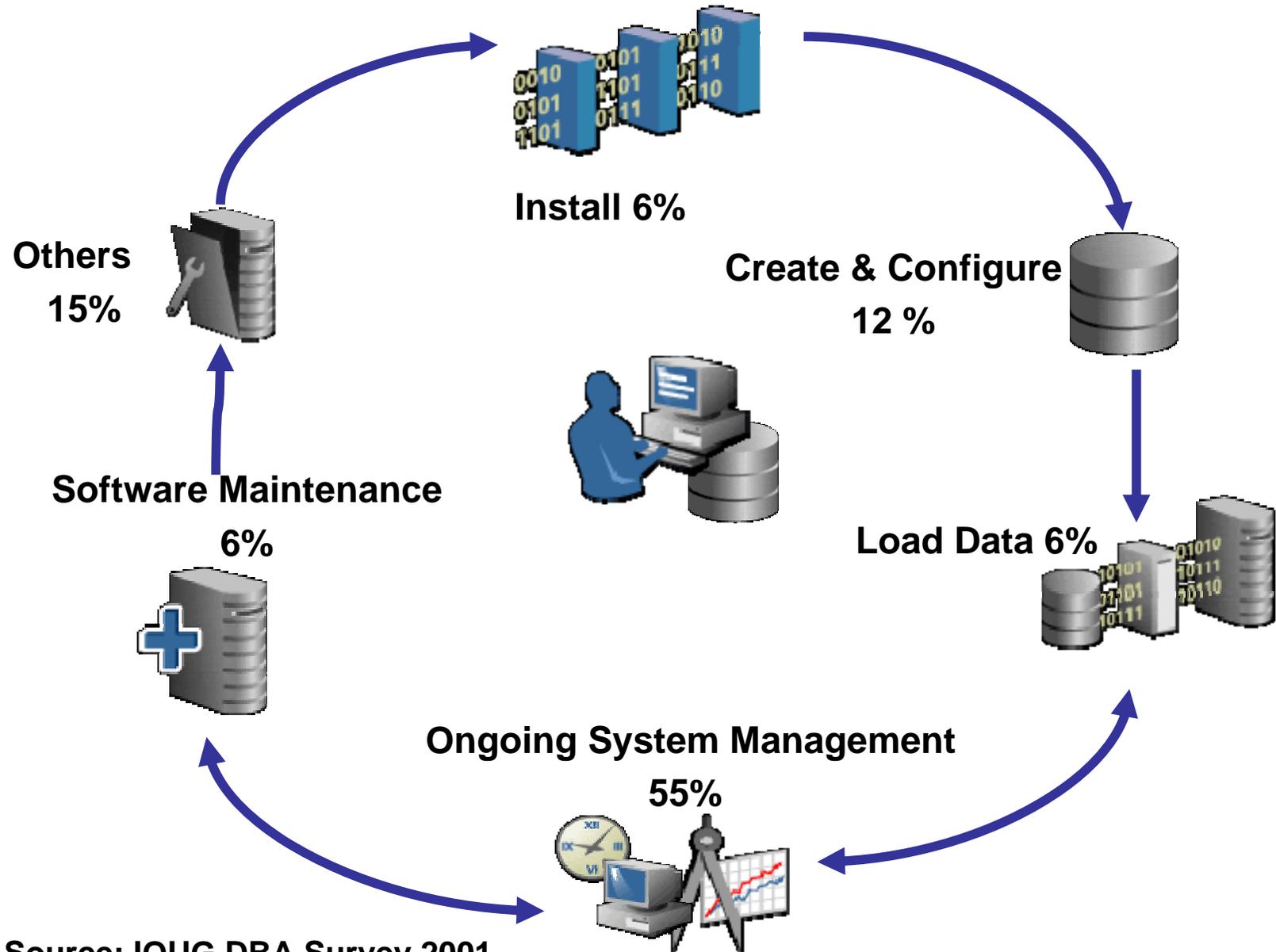
"At a company of GM's size, if you don't have information technology linked to the business, you can waste a lot of money. Not a \$1,000. Not even \$100 million, but billions."
GM's CIO, Ralph Szygenda InformationWeek GM Touts Common IT Infrastructure Sept 21, 2004



Transformation of IT

- IT has moved from optimizing functions like accounting and payroll to maintaining, securing and optimizing core business processes like enterprise resource planning (ERP)
- Past IT focused on management by resource. As business demands grow, substantial manual effort required to meet service objectives
 - As infrastructure grows it becomes more heterogeneous
 - As companies attempt to manage more without adding IT budget or staff, percentage of money and time spent on managing infrastructure increases significantly
 - Not sustainable, instead increasingly difficult for IT to deliver and keep up with demands for growth

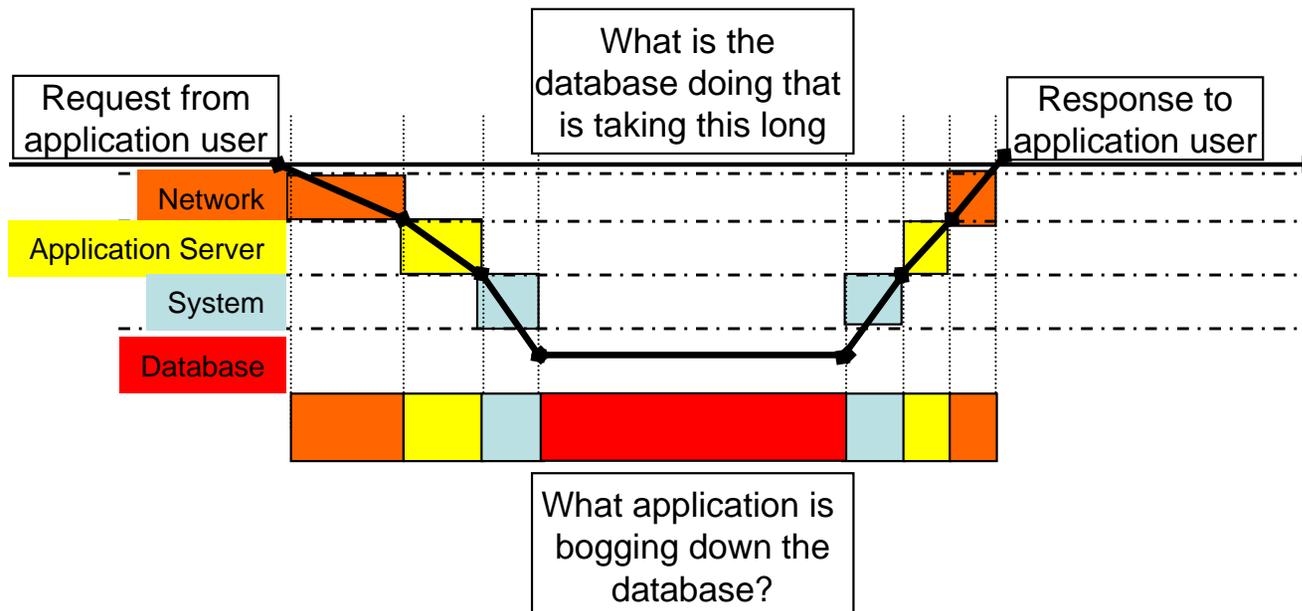
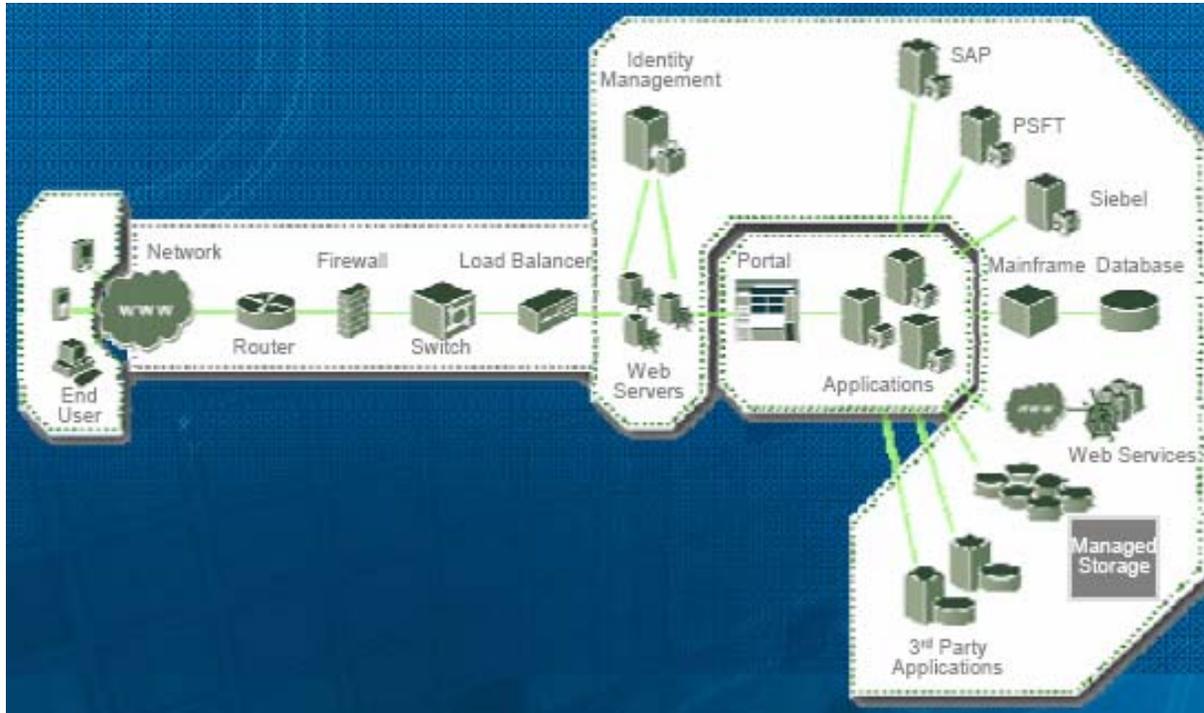
Survey in 2001



Widening Role

- Database systems inventoried and configurations managed (CMDB)
- Review and use documented management processes & practices
 - Integration, automation, repeatable policies
- Understands and accepts responsibility regarding internal controls
 - Follows division of roles and responsibilities (segregation of duties) that prevents one DBA from unauthorized alterations
 - Test and document database management process controls
- Review and manage risks associated with database and their management
 - Assist in audit of database management control methods
 - Gap identification, remediation and controls improvement process
- Update database management processes and document controls
- From generic platform support to knowing business requirements and how data flows across the infrastructure

New Complexity and Challenges



Supporting Demand

- To meet demand, IT needs to structure work into processes and seek ways to manage them effectively and efficiently
 - Deliver service as business demands to aid in cost effective growth and take advantage of new business
- Effective delivery of business services depends on IT being able to discover and correlate data from various systems in a way that enables action to be taken on a coordinated cross-domain basis
 - Automating and integrating within and across IT processes makes IT more efficient, streamlined, responsive, flexible

IT Must Deliver More Business Value

Automation

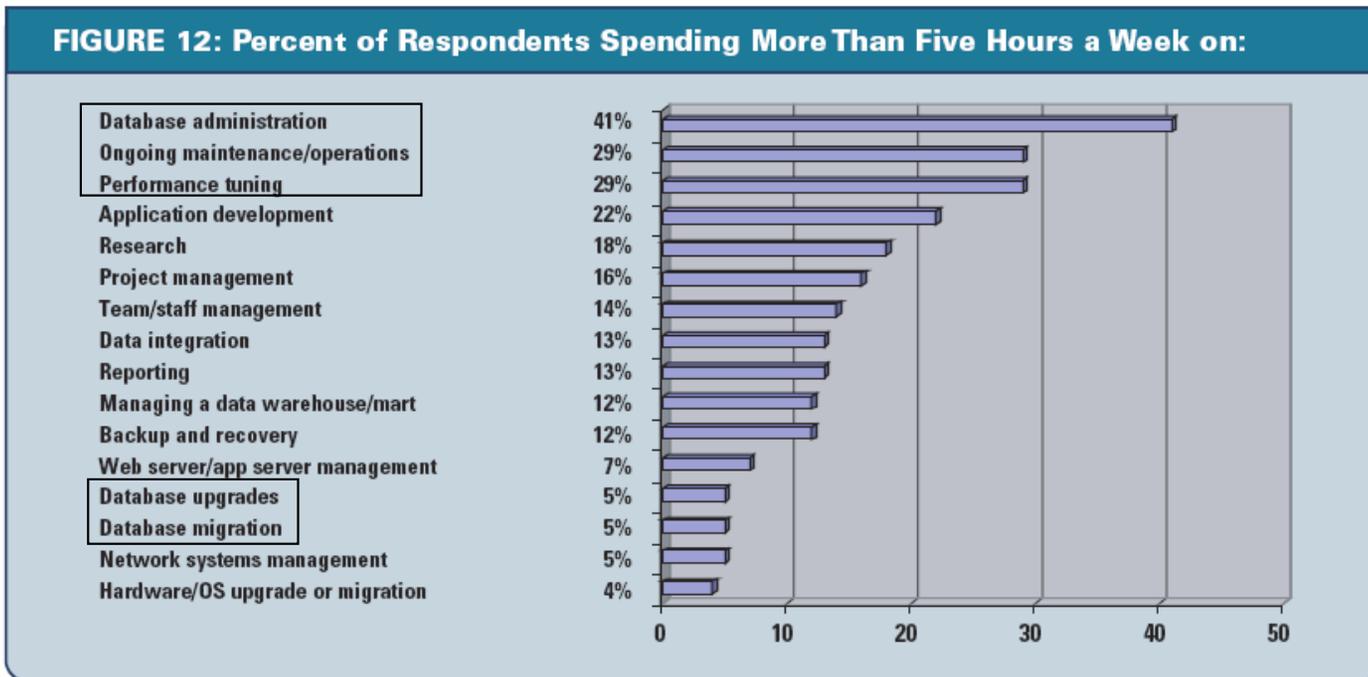
- Autonomics – Database Managing themselves
 - No more DBAs
 - Short Circuit, Space Odyssey 2001, I Robot?
- 1920, Czech playwright Karel Capek's play *Rossum's Universal Robots*
 - Replacing costly human labor
- Robots have reshaped manufacturing, not eliminated
- Automation has the potential to change the economy, our health, standard of living, and world in which we live
 - Instead of no management, new management



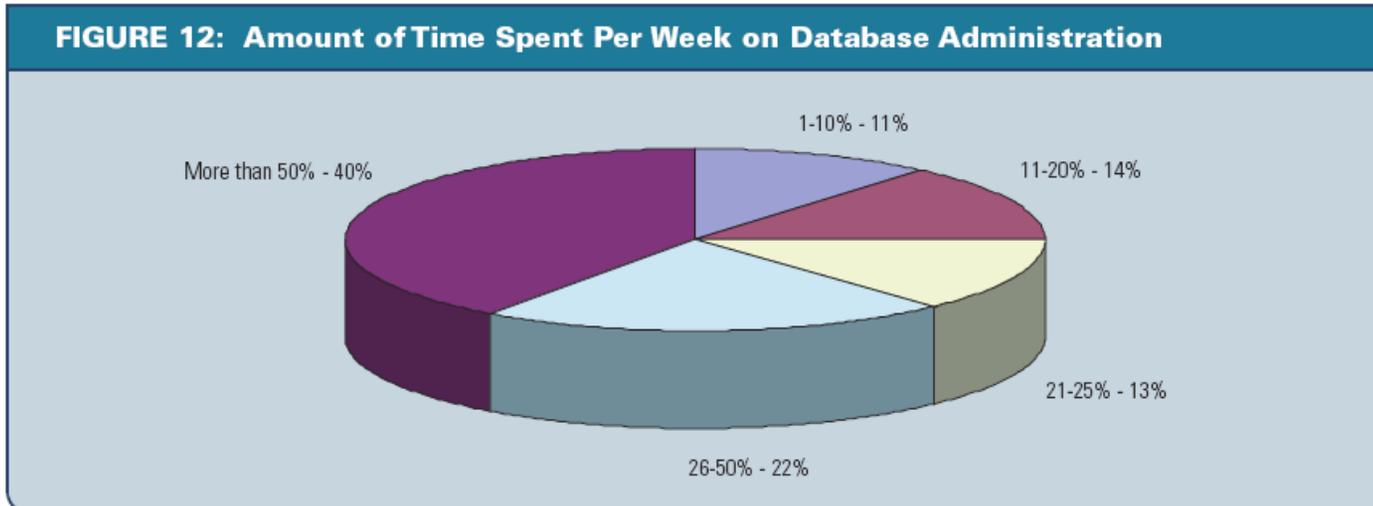
Integration and Process

- A high level of process maturity is needed for automation
 - Well-defined roles and responsibilities and documented, repeatable processes and procedures
 - Integration enabled eliminating gaps humans fill
 - Some still have gaps to be filled, others haven't yet matured processes to realize benefits of automation
- Database should support workflow through process automation with transactions against the database

2006 and 2007 Surveys



IOUG Survey 2006 THE 24x7 CHALLENGE



IOUG Survey 2007 The Rise of the Renaissance Data Professional

Technology and Change

- Blacksmith when the automobile came of age
 - An opportunity to become a mechanic
- The Model T
 - Fit rings by hand
- 1970 Chevrolet
 - Point, plugs, condenser, timing
- The Jaguar
 - 12 cylinder, manual valves
 - Narrow but deep technical expertise
- The 2007 Toyota Sequoia
 - Rotate the tires
- Change is the price tag for technical improvement

Use Case

- Your company has several different database vendors supporting applications across multiple locations
 - Enhancements from vendor Fusionsoft need deployed for databases supporting worldwide ERP and CRM
 - Some additional tables, indexes and sizing adjustments
 - Monthly export
 - In-house updates from internal developers to be deployed
 - Weekly job to bring in data from ERP, deploy a new index with automated refresh across all production databases to gain better performance for the FusionSQL system
 - And a DBA is on vacation

Industry Advisement

- DBA role moving away from traditional operational support
- DBAs should broaden skills and administer different types of databases
- Managing databases with unrelated tools makes a DBA's job hard
- Server and storage management is for other administrators as DBAs focus on administration of databases and leveraging skills and processes across platforms
- Even with database vendor automation, tools and database management practices needed
- Databases may come with management but companies can use third-party tools to help achieve more automation
- One survey determined only 9% of IT organizations using any of the common process methods or standards and 60% ever intend to

Improvement and Innovation

- Do current practices work or scale to the new challenges?
 - As databases grow, are jobs running out of hours in a day
 - No time for offline administrative maintenance
 - Code not portable
 - To work in other locations with other databases, applications or systems
 - Is there inability to schedule work across different databases
 - Will your company be increasing its reliance on composite SOA applications dependent upon network, server, storage and a variety of database vendors
- To affect change requires change
 - How do you prepare to manage for fusion applications

Opportunities

Database Based

- Utilities with or available for charge from database vendor
 - Understand database version dependencies
 - Review and understand dependencies by database type
 - Read and understand licensing, what is included, what is chargeable
 - Oracle has 15 options for purchase and growing
 - For example tuning pack for online reorg or redefinition scripts
 - http://www.oracle.com/technology/products/oem/pdf/ds_db_tp.pdf
 - Options that require an option
 - Oracle Tuning Pack 10g requires an Oracle Diagnostics Pack 10g license
 - Gartner Report G00140116 Oracle's AWR Might Cost You Money
 - What abilities to support composite applications for other databases such as DB2 or SQL Server and distributed and mainframe platforms
 - Research marketing words such as “manage”
 - Database modeling, monitoring, performance, administration, backup and recovery capabilities

Oracle Enterprise Manager Licensed Management Packs and Plug-Ins

- Licensed Management Packs for Oracle Enterprise Manager
 - Oracle Enterprise Manager Service Level Management Pack
 - Service Level Management Pack Licensed Links
 - Service Level Management Pack Licensed CLI Commands
 - Oracle Enterprise Manager Provisioning Pack
 - Provisioning Pack Features formerly in Configuration Management Pack
 - Features exclusive to Provisioning Pack
 - Provisioning Pack Licensed Links
 - Oracle Enterprise Manager Configuration Management Pack for Non-Oracle Systems
 - Configuration Management Pack for Non-Oracle Systems Licensed Links
 - Configuration Management Pack Reports
 - Configuration Management Pack Repository Views
 - Enterprise Manager System Monitoring Plug-In for Hosts
 - System Monitoring Plug-In for Hosts Licensed Links
 - System Monitoring Plug-In for Hosts Licensed Repository Views
 - System Monitoring Plug-In for Hosts Licensed Command Line Interface Verbs
 - System Monitoring Plug-In for Hosts Licensed Reports
 - Enterprise Manager System Monitoring Plug-In for Storage
 - System Monitoring Plug-In for Storage Licensed Links
 - Enterprise Manager System Monitoring Plug-In for Network Devices
 - System Monitoring Plug-In for Network Devices Licensed Links
 - Enterprise Manager System Monitoring Plug-In for Non-Oracle Middleware
 - System Monitoring Plug-In for Non-Oracle Middleware Licensed Links
 - Enterprise Manager System Monitoring Plug-In for Non-Oracle Databases
 - System Monitoring Plug-In for Non-Oracle Databases Licensed Links

Oracle Enterprise Manager, Grid Control

- Oracle Enterprise Manager (OEM) offered as an add-on to the database to help make administration of Oracle software easier
- OEM is Oracle's solution for administering and monitoring applications and systems that are based on the Oracle technology stack
 - The fact that options, Management Packs, or products are included in product CDs or downloads or described in documentation that you receive does not authorize you to use them without appropriate licenses
 - "You cannot use the options, packs, views, reports, or commands described in these sections without the appropriate licenses"
- Check Oracle documentation for latest
 - Managing the Complete Oracle Environment with Oracle Enterprise Manager 10g WP Jan 2006
 - Oracle® Enterprise Manager Licensing Information 10g Release 2 (10.2) B25629-01 June 2006
 - http://downloadeast.oracle.com/docs/cd/B19306_01/license.102/b25629/title.htm

OEM Options for Service Level Management

- License Service Level Management option for
 - Enterprise Manager Home page
 - Beacons page of the Add Services wizard
 - Service Test from Availability page
 - Service Tests and Beacons link in the Generic Tasks section
 - Defining service's availability based on execution of a service test
 - Others
 - When performing these Command Line commands
 - `emcli apply_template_tests`, `emcli create_service`, `emcli add_target`

OEM Options for Provisioning

- **License Provisioning option to**

- Create and maintains a library of reference software images
- Deploy operating systems and software to bare metal servers
- Extend RAC clusters or Oracle Application Server middleware
- Add an instance to Enterprise Manager
- Convert a database to a RAC cluster
- Patch Linux systems

- **When using these OEM interface links**

- Enterprise Manager Home page Violations page, the Security At a Glance tab, Critical Patch Advisories for Oracle Homes, any Patch button
- EM deployments page, Critical Patch Advisories for Oracle Homes, any Patch button, Patch Oracle Software, View Patch Cache, Patch Linux Hosts, Clone Database, Clone Oracle Home
- Apply Patch and View Patch Cache under the Database Software Patching
- Data Movement section Clone Database in the Move Database Files column of the Database Software Patching Apply Patch and View Patch Cache
- Convert to Cluster Database link
- Add Instance, delete Instance for RAC
- All Targets page, the Patch Oracle Software link
- Security At a Glance links

OEM Option for Configuration Management – non Oracle

- **License Configuration Management option to**
 - View and analyze configuration, deployments/installations
 - Search configuration
 - Compare search
 - Compare configuration
 - Metric and Policy Settings
 - Manage policies, including policy notifications
 - Configuration reports
 - Repository tables/views that store/expose the above data
 - Compliance Score (%)
- **When using these OEM interface links**
 - All links in the All Targets Policy Violations
 - All links in the Critical Patch Advisories for Oracle Homes
 - All features in the Deployments Summary section
 - Policy Violations page and associated links
 - All links in the Configuration and searches section
 - All links in the Client Configurations section
 - All links in the Security section
- Configuration Management Pack Reports
- Configuration Management Pack Repository Views
 - 84+ views

OEM Option for System Monitoring - Hosts

- License Systems Monitoring Hosts option for
 - Event management and monitoring
 - Event/Alert notifications: Notification methods, Rules, and Schedules
 - Event/Alert history and metric history (Hosts)
 - User-defined Metrics
 - Metric snapshots
 - Blackouts/Planned Outages
 - Monitoring Templates
 - Corrective Actions
- To use Performance and Event Reports
- When using the 13 repository tables/views that store the above data
- When performing these Command Line commands
 - `delete_blackout`, `get_blackout_details`, `get_blackout_reasons`,
`get_blackout_targets`, `get_blackouts`, `stop_blackout`

EM System Monitoring Option - Storage

- License Systems Monitoring Storage option for
 - Performance monitoring and trending (Storage)
 - Event management/monitoring (Storage)
 - Event/Alert Notifications: Notification Methods, Rules and Schedules
 - Event/Alert history/metric history /metric history (Storage)
 - User-defined metrics
 - Metric Snapshots
 - Blackouts/Planned Outages
 - Monitoring templates
 - Corrective actions (including response actions)
- Performance and Event reports
- Repository tables/views that store/expose the above data
- Command Line Interface verbs

EM System Monitoring Option - Network Devices

- License Systems Monitoring Network Devices option for
 - Performance monitoring and trending (Network Devices)
 - Event management/monitoring (Network Devices)
 - Event/Alert Notifications: Notification Methods, Rules and Schedules
 - User-defined metrics
 - Metric Snapshots
 - Blackouts/Planned Outages
 - Monitoring templates
 - Corrective actions (including response actions)
 - Performance and Event reports
- Repository tables/views that store/expose the above data
- When performing these Command Line commands
 - `add_target` command, `f5_bigip_v9plus_loadbalancer`, `juniper_netscreen_firewall`, `checkpoint_firewall`

EM System Monitoring Option - Middleware

- **License Systems Monitoring Middleware option for**
 - Performance monitoring and trending
 - Monitoring of JMX/Web Services endpoints hosted on app server
 - Event management/monitoring
 - Event/Alert Notifications: Notification Methods, Rules and Schedules
 - Event/Alert history/metric history /metric history
 - User-defined metrics
 - Metric Snapshots
 - Blackouts/Planned Outages
 - Monitoring templates
 - Corrective actions (including response actions)
- **Performance and Event reports**
- **Repository tables and views that store or expose the above data**
- **When performing these Command Line commands**
 - add_target command, microsoft_biztalk, microsoft_commerceserver, microsoft_dotnet, microsoft_iis, microsoft_isaserver, active_directory, websphere_j2eeserver, weblogic_j2eeserver

EM System Monitoring Option - non-Oracle database

- License System Monitoring Plug-in for Non-Oracle Middleware to use functions
 - Microsoft SQL Server
 - IBM DB2 Universal Database
- When performing these Command Line commands
 - `add_target` command, `microsoft_sqlserver_database`, `ibm_db2_database`

Third-Party Partner Technology

- Hardware vendor specific
 - Host operating system or device specific monitors
- Independent Software Vendors
 - Event, sampling monitors
 - There are Frameworks available that offer database monitoring
 - Once the monitor identifies a potential problem, what is the capability to perform database diagnostics or remediation of the resultant problem
 - What more does it offer then alerting
 - What are the capabilities for integration, interoperability
 - Best of breed point products
 - Integrated solutions

Industry Analysts have reported 90%+ of enterprises have more than three types of databases

Standalone Point Products

- Singular tools may help on a few databases but can lack capabilities for integration, interoperability and or automation
 - May work only for a single database type or even version
 - Understand database, version, or platform dependencies
- ⇒ Look for expandability to keep up on business demand without overloading servers or networks
 - Looks nice, but no shared components or common services
 - Added hardware for each databases and OS. Watch for network overloading
- ⇒ Understand if it is simply executing the SQL for you or sophisticated enough to perform non-native functions while applications are online
- Increasing size and complexity drives need from individual point solutions for advanced technology, integration and automation

Integrated Solutions

- As complexity and database growth increases advanced technology can counter lengthened time to complete operations and maintenance
- To consolidation and centralize management functions
 - Independent of database, version, platform
 - Watch for products you pay twice to use (pay vendor and Oracle) that may just pull from Oracle licensable options
 - Gartner Report G00140116 Oracle's AWR Might Cost You Money
- Automate workflow and use cases
 - Automate administration work regardless of database type, platform
 - Independence from database proprietary functions
 - Standardize processes, increase efficiency with more control and accountability

Integrated Solutions

- Realize and manage with fact based information
 - Service level response and resolution is reduced when data appears differently in non-integrated tools
 - Ever revolving “Not me, must be them” meetings
- Perform administration remotely by browser without client installation
 - Watch for tools requiring a client to incorporate a browser
 - Non-platform independence = hidden hardware and maintenance costs
- Enable independent database workflow and scheduling
 - Don't have to be an expert on every database
- Cost effectively manage many different database systems
 - On your way to Fusion
 - If you company is not going 100% Oracle

The Fusion Administrator

- Manages Oracle differently than version 2-6, or 6-9i
 - System programmer, administrator, architect
 - Database, middleware and infrastructure interdependencies
 - Oracle composite applications using other than Oracle databases or Application Servers or services
- Helps ensure capacity no matter the demand to service the business
 - Single vendor database focused DBAs will face future peril
 - No matter the application
 - No matter the infrastructure that supports it
- Learns when and how to deploy new advanced technologies in support of business and across business
 - A “*Silo Buster*” , out-of-the box thinker

The Fusion Administrator

- Continues with education and learning new databases, middleware, to future proofing their career
 - For the minority “Oracle Only” Eco-System
 - Review automating with available Oracle options
 - Consider packs based on requirements versus bundled in
 - What appears free initially, could cost a lot as part of maintenance
 - Don't overlook licensing minimums by database, by instance
 - For composite applications and multi-infrastructures
 - Product integration a key component to automation
 - Don't forget items like network or infrastructure management
 - How soon can you start automating your processes?
- Importance of data to business has increased over time, yielding a robust career opportunity

Beyond 2007

- It's no longer just about a new database release
 - Heterogeneous environments here to stay as companies continue to choose the DBMS to meet dynamic business needs
 - Standardization, consolidation, and best practice initiatives continue
 - Demand for automation increasing, driving need for simpler, unified management
- It's about the impact, business usage, of new technology and how it will be used and managed across your enterprise
 - Integrated and proactively managed together, not separate
 - From a business-oriented view and flow regardless of technology
 - Deliver and manage to consistent levels of service
 - Ensure efficient use of resources
 - With best practices and automation
 - And enable new service offerings and business models

Conclusion

- Listen to your customer, review their requirements
 - Don't be a Nay Sayer
 - Don't build walls around management
- Don't fear the future; be part of it
 - Don't resist change; exploit it.
 - Don't let silos stop you from improving business or making change
- Show leadership and how to optimize and benefit your business
 - People
 - Talented team with architecture, development and operations expertise
 - Process
 - Documented and practiced process to analyze, prioritize, develop, test, implement and learn
 - Technology
 - Informed management, faster, and perform corrections more efficiently
 - Possibilities
 - With people, process, and technology, the potential is limitless

Further Information, Questions?

- Online information resources:

- www.nocoug.org
- www.oracle.com
- www.ioug.org



For the Complete Technology & Database Professional

- Technology you may wish further investigate with your local contact

- CA is one of the world's largest IT management software providers. CA software unifies and simplifies complex IT environments in a secure way across the enterprise for greater business results. We call this Enterprise IT Management (EITM™) It's how you can manage systems, networks, security, storage, applications and databases securely and dynamically. You can build on your IT investments, rather than replacing them, and do so at your own pace. www.ca.com/eitm

- Technology you may wish to download and use in your company at “No Charge” to manage major database vendors from one console

- CA Database Command Center
 - www.ca.com/databasemanagement
 - <https://www.ca.com/Register/form.aspx?CID=84918>