

Session 511, Monday April 14<sup>th</sup>, 2:15-3:15pm

# The New Fusion Frontier - Oracle Management in the Future

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## Meet the 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 blogger and regular speaker at IT industry conferences worldwide and columnist contributor 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

# Abstract

- The company may own applications like Oracle eBusiness Suite, PeopleSoft, Siebel or your CIO wants to leverage "SOA" that's been in the publications and deploy Fusion applications after attending a recent Oracle OpenWorld executive track. Unlike Oracle eBusiness Suite, SOA-based applications are seldom homogeneous and bring new management challenges to IT that need to be understood and addressed with proper preparation. While developers and users get excited to get it into production as soon as possible, SOA technology such as Oracle Fusion fundamentally changes and challenges the traditional role of those who manage Oracle technology.
- 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 Managers and DBAs should understand & consider
  - Trends others in the user community are already experiencing
  - What is involved in planning for Oracle Fusion Middleware and Service Oriented Applications
  - How to manage Services Oriented Infrastructure for Fusion Composite Applications
- Where to learn more and next steps

# 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 as part of functional need
  - Administrators required to keep the backend running
- Over time, more functionality, more to manage
  - Work on manageability
  - Oracle also has an ERP
- Internet era
  - Databases accessible via the web
  - 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

# The Fusion Strategy

- Applications
  - Peoplesoft, Siebel, eBusiness Suite, JD Edwards
- 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...



# Database Agnostic

## - JD Edwards

- Customers choose tools, database, middleware from partner vendors or 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](http://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](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 Fusion Branded Applications, a Service Oriented Architecture

- Existing applications and new Oracle composite applications
  - Leverage infrastructure to lower cost of obtaining new app functionality

## - Heterogeneity

- Application Server services
- Database services

## - Across highly available

- Networks
- Systems

## - Interoperability

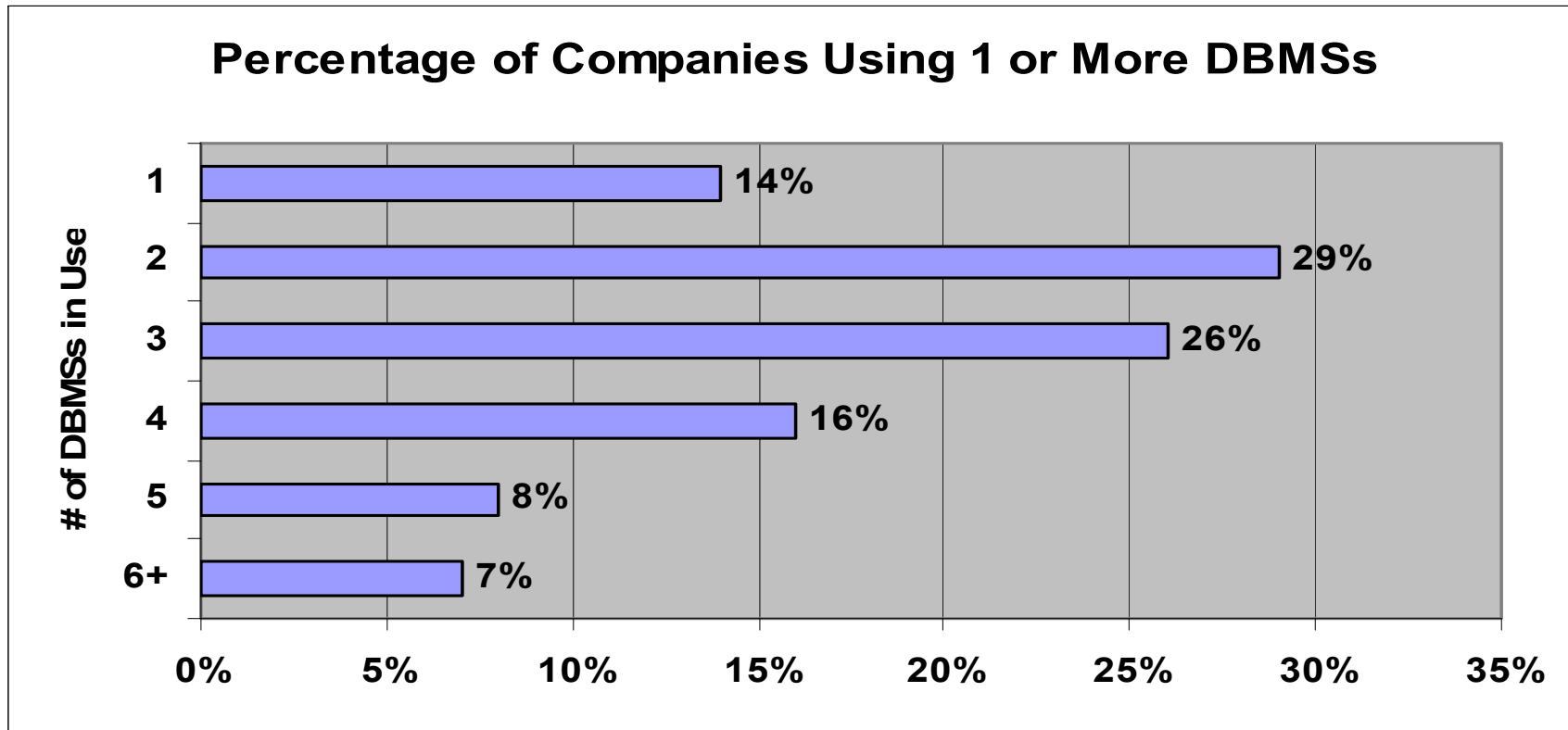
- Reusability

## - Requires greater Service Availability across the infrastructure

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	*	*	*	*	*	✓	

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

# Heterogeneity not Homogeneity



Source: 2006 survey of IOUG members

# Fusion Service Oriented Architecture

- *“SOA is a paradigm for organizing and utilizing distributed capabilities that may be under the control of different ownership domains. It provides a uniform means to offer, discover, interact with and use capabilities to produce desired effects consistent with measurable preconditions and expectations”*. Organization for the Advancement of Structured Informational Standards (OASIS)
- **S**ystems exposing & providing access to functions and data
- **O**pen interoperable protocols
- **A**rchitecture of connected systems offering shared services

Of strategic importance for administrators such as DBAs to understand

# SOA Illustration

- To locate a tire shop, you might search a phone directory; a printed repository of services.
- The tire shop makes its services available to anyone that wants to consume their service; customers that want to purchase tires or repair
- The tire shop itself is a consumer of supplier services such as tire and rim manufacturers, environmental disposal, payroll, insurance, etc... things customers are usually not burdened or exposed to when buying
- Shopping at the tire shop, customers are provided with a list describing available products and services of which they can make selection
- Selection may be governed by policies that limit or deny. Tire with sidewall puncture must be replaced, can't repair
- Your service response is interdependent upon the number of available technicians, equipment, vehicle condition, or even time or day of week

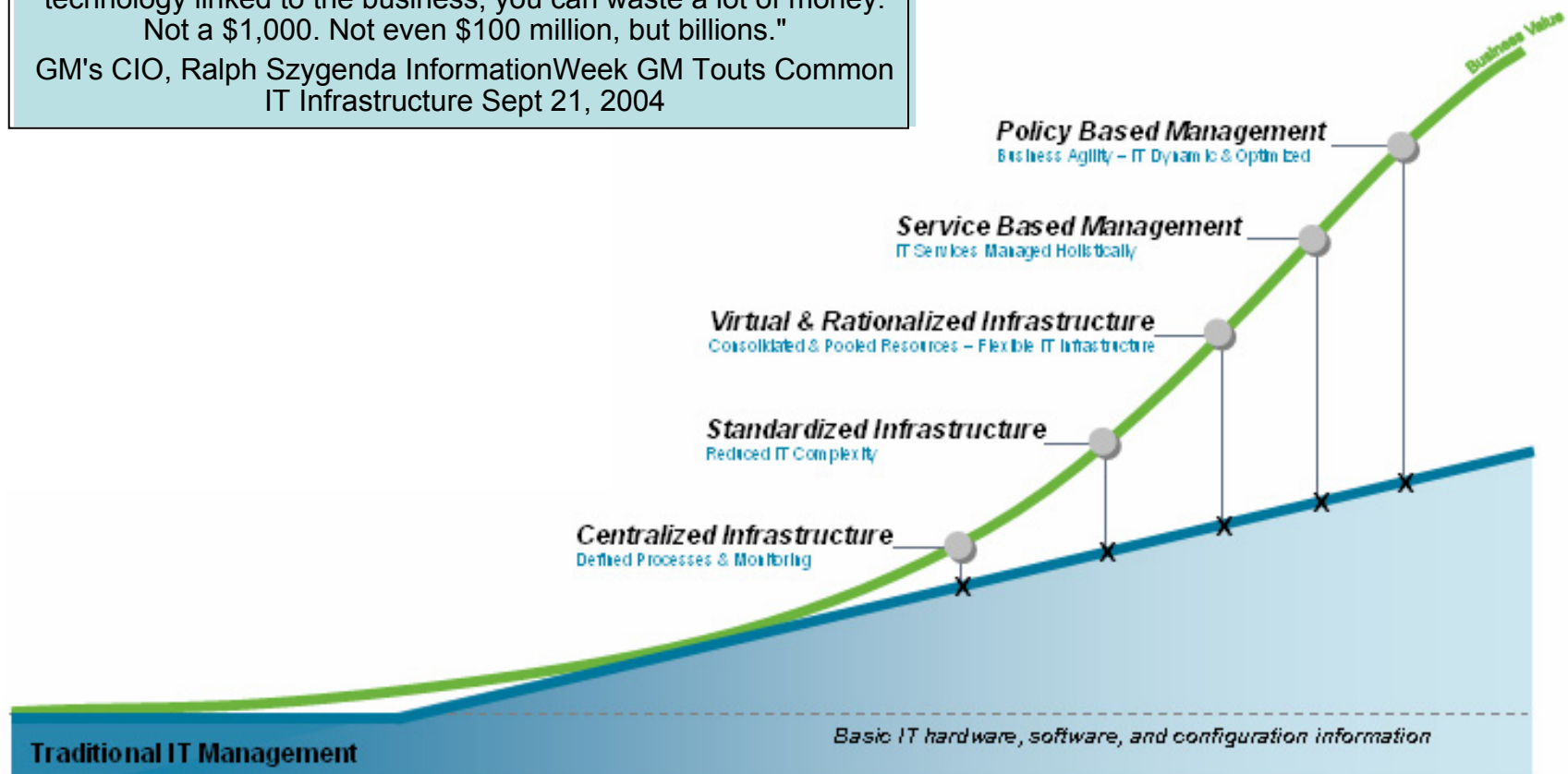
# A Transformation of IT Services

- IT moved from optimizing specific functions like accounting and payroll to maintaining, securing and optimizing core business processes like enterprise resource planning (ERP)
- Now a move from its legacy stove-piped management to one of enterprise IT infrastructure management
  - Past IT focused on management by resource, yet as business demands grow, substantial effort required to meet service objectives
  - As infrastructure grows it becomes more complex and heterogeneous
  - As companies attempt to manage without adding IT budget or staff, percentage of money and time spent on managing infrastructure increases significantly

# Services Oriented Management

- Business now driving IT to deliver agile, higher-quality services at lower, business driven cost and keep up with new demand

"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



# Recognize & Resolve Anchors to Change

- What keeps IT from focusing on the strategic
  - Increased growth and complexity
  - Manual methods not getting the work done
  - Lack of management process, maturity
  - No time or resources to automate
- Increasing management cost
  - New technology versus “status quo” mentality
  - Over provisioning because integrated cross-domain management and processes were lacking
- Consolidation, integration and process standardization enable the ability to change

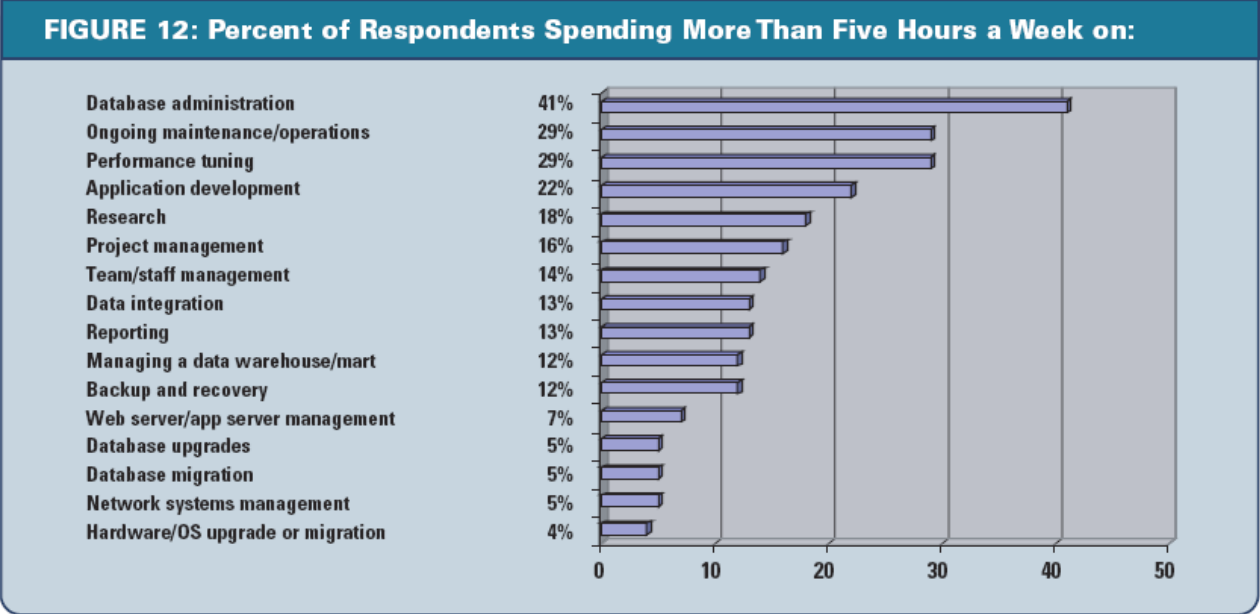


# Automation & Manageability

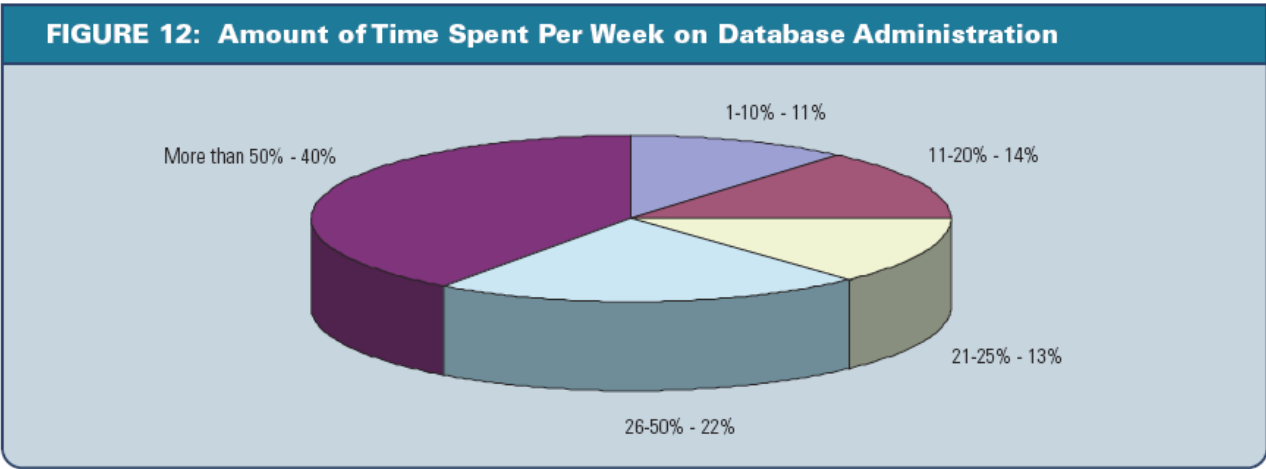
- Autonomics – Database Managing themselves
  - No more DBAs
- 1920, Czech playwright Karel Capek's play *Rossum's Universal Robots*
  - Replacing costly human labor
  - Short Circuit, Space Odyssey 2001, I Robot
- Robots reshaped manufacturing, not eliminated
- Automation has the potential to change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



# 2007 Survey of Oracle DBAs



IOUG Survey 2006 THE 24x7 CHALLENGE



IOUG Survey 2007 The Rise of the Renaissance Data Professional

# Preparedness

- SOA provides greater interoperability inside and outside
  - Decouples hardcoded relationships
  - Encapsulate business logic, genericize, repurpose
  - Loosely coupled, subscriber unaffected by changes to publisher
- Attractive to developers, implementers excited to get solutions running, but often don't consider
  - Increased infrastructure reliance and traffic
  - Less predictability and varying service loads
  - Existing end to end performance management capabilities
  - Real world load testing and scalability
- If not properly planned and supported, potential to overrun capacity of existing infrastructure and technology
  - Analogous to
    - Too many cars and businesses, but not enough roadways
    - A greater potential for gridlock

# Advisement From Industry Experts

- 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 harder
- 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

# Perform a Readiness Assessment

- Access methods in your existing deployments
  - As databases grow, are jobs keeping within a 24 hour (day) period?
  - Is administrative maintenance being routinely performed?
  - Are scripts/code reusable managing work across RDBMS?
  - Ability of scheduling of workload across RDBMS?
- Companies planning for composite SOA applications
  - Implementing and developing, but methods of management not yet?
  - Assessment of current methods, risk identification for working or scaling to the new SOA challenges?
    - Level of infrastructure management integration enabling policy/rules
    - Infrastructure capability (network, server, storage, app servers, RDBMS)
- To affect change requires change
  - How prepared are you to manage composite SOA applications?

# Technology Drives Change

- Blacksmith when automobile came of age
  - An opportunity to become a mechanic
- Technology change, methods and process change
  - The Model T
  - 1970 Chevrolet
  - The Jaguar
  - The 2007 Toyota Sequoia
  - Change is the price tag for technical improvement

# Opportunity

# Innovation

- Some experiencing performance difficulties prior to the deployment of SOA
  - Instead of looking at combination and interaction of infrastructure components, have instead deploy point based utilities in hopes of a quick remedy
  - With silo'd management, IT has over provisioned trying to ensure service levels as integrated management cross-domain processes and were lacking
- To manage complexity
  - IT needs operational overview to identify where applications are hitting tiers of the infrastructure and the capability to diagnose core of the problem
  - “One source of truth” driven service measurement prevents over-provisioning
- To increase efficiency and effectiveness
  - IT needs process standardization across domains to improve efficiency
- Serviced based management
  - IT resources don't specialize by individual technology, but function
  - There is opportunity to overcome complexity with new technologies
    - Across network, server, app server, database, storage infrastructure



# Technology - Database Based

- Utilities with or available for charge from database vendor
  - Are database version dependencies and upgrades involved
  - Understand if functionality is database vendor dependent
  - Understand licensing, what is included, what is chargeable
    - Oracle has over 23 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](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
- Understand abilities for composite applications across 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
- And continuing to grow...

# Oracle Grid Control, Enterprise Manager

- Oracle Enterprise Manager (OEM) offered as add-on to help make management 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"*
- Review Oracle.com and 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](http://downloadeast.oracle.com/docs/cd/B19306_01/license.102/b25629/title.htm)

# 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`

# 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 - 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`

# Technology - Third-Party Partner

- Hardware vendor specific
  - Built-in host operating system or device specific monitors
- Independent Software Vendors
  - Event, sampling monitors, SNMP mib
  - Frameworks available that offer database monitoring
    - Once the monitor identifies a potential problem, is there capability to perform database diagnostics or remediation of the resultant problem
    - Does it do more than just alerting
    - Capabilities for integration, interoperability
  - Best of breed point products
    - Capabilities for integration, interoperability
- Integrated enterprise management 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
- Seek expandability to keep up on business demand without overloading servers or networks
  - Looks nice, but no shared components or common services
  - Added hardware needed, watch for network overloading
  - Advertised no database overhead, may instead require a network appliance; also may need for every network switch
- 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 work
- 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 by browser without client installation
  - Watch for tools requiring a client to incorporate a browser
  - Platform independence, no hidden hardware and maintenance costs
- Enables 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 SOA applications
  - If you company is not going 100% Oracle

# The Fusion Administrator

- Learns new databases, middleware, future proofs their career
  - Manages Oracle databases differently then v6-v9i
  - Database, middleware and infrastructure interdependencies
  - Enterprise architect, SOA infrastructure management
  - Oracle composite applications using other then Oracle databases or Application Servers or services
  - Learns when and how to deploy new advanced technologies
- A leader establishing the best practice, demonstrating results to new challenges

# Affecting Change

- For 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
- Heterogeneous environments using composite applications and infrastructure
  - Need for simpler, unified management; need for automation
  - Standardization, consolidation, and best practice initiatives
  - Integration a key enabler to automation, repeatability
  - Integrated and proactively managed together, not separate
- Importance of data to business has increased over time, yielding a robust career opportunity
  - How soon can you start automating your processes?

# Conclusion

- Listen to your customer, review their requirements
  - Don't be one of those that says it can't be accomplished
  - Don't build or hide behind walls of 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

- Online information resources:
  - [www.ioug.org](http://www.ioug.org)
  - [www.oracle.com](http://www.oracle.com)
  - <http://www.oasis-open.org>
  - Whitepaper for this presentation
  - Forrester WP "IT Operations And Systems Management: The Next Five Years"
- 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. [www.ca.com/eitm](http://www.ca.com/eitm)
  - Download and use in your company at "No Charge" for major database vendors in one web console
    - <https://www.ca.com/Register/form.aspx?CID=84918>
    - [www.ca.com/databasemanagement](http://www.ca.com/databasemanagement)

