Gaining Operational Excellence and Strategic Agility through Enterprise Architecture
Your Oracle Hosts

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The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle’s products remain at the sole discretion of Oracle.
Agenda

- Oracle and EA
- How to Build a Sustainable Architecture
- Oracle EA Assets
Complete
Open
Integrated
Hardware
Software
Complete
Enterprise Architecture
A Means for Alignment and Coherence

Business Dynamics
- Grow
- Adapt
- Innovate
- Reduce Costs

Technology Support
- Business Processes
- Development
- Performance Management
- Information Assets
- Security & Compliance
- Infrastructure
Oracle’s “Practical” Approach

People

Oracle Enterprise Architects

Process

Oracle Architecture Development Process

Portfolio

Oracle EA Framework
Oracle EA Guiding Principles

Prescriptive Guidance, Practical Approach

• Driven by **Business Strategy**, focused on building an **Architecture Vision**

• Just-Enough Just-in-Time for solution development efforts

• Iterative and collaborative

• Reuses best practice **Business Models** and **Reference Architectures**

• Can be enforced
Building A Sustainable Architecture

- Architecture Vision
- Current State
- Future State
- Strategic Roadmap
- Enterprise Architecture Governance
- Business Case

Enterprise Architecture Repository
Building A Sustainable Architecture

Architecture Vision

- Operating Model
- Business Capabilities
- Guiding Architecture Principles

Enterprise Architecture Repository

- Business Case
- Enterprise Architecture Governance
- Strategic Roadmap
- Current State
- Future State

Guiding Architecture Principles
Architecture Vision

Operating Model

Level of Business Process Standardization vs. Level of Business Process Integration

Coordinated

Unified

Diversified

Replicated

Source: MIT Sloan Center for Information Systems Research
# Proposed Architecture Principles

## Future State Guiding Principles

<table>
<thead>
<tr>
<th>Domain</th>
<th>Current State</th>
<th>Future State</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Business</strong></td>
<td>• Compliance with laws and regulations</td>
<td>• Enable business agility</td>
</tr>
<tr>
<td></td>
<td>• Enable business scalability</td>
<td>• All business functions must be measured</td>
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<tr>
<td></td>
<td>• Improve customer intimacy</td>
<td></td>
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<tr>
<td></td>
<td>• Back office operations must be optimized for cost</td>
<td></td>
</tr>
<tr>
<td><strong>Application</strong></td>
<td>• Common development methodology and tools</td>
<td>• Centralized security policies (Security Policies not in code)</td>
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<tr>
<td></td>
<td>• Ease of use</td>
<td></td>
</tr>
<tr>
<td><strong>Information</strong></td>
<td>• Secure data sharing and publishing</td>
<td>• Information should be processed in near real-time</td>
</tr>
<tr>
<td></td>
<td>• End to end enforcement of data security</td>
<td>• All information should have a single source of truth</td>
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<tr>
<td></td>
<td>• Common information access layer</td>
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</tr>
<tr>
<td><strong>Technology</strong></td>
<td>• Platform standardization</td>
<td>• Service Oriented Architecture</td>
</tr>
<tr>
<td></td>
<td>• High availability (99.9% uptime)</td>
<td>• Virtualize implementations</td>
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<td></td>
<td>• Compliance to SLAs</td>
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<td></td>
<td>• Maximize end user performance</td>
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</table>
Building A Sustainable Architecture

Strategic Roadmap

- Maturity Model
- Business-Driven Transition Architecture
# Strategic Roadmap

<table>
<thead>
<tr>
<th>Business Architecture</th>
<th>Business / IT Strategy</th>
<th>Current State</th>
<th>Operational Excellence</th>
<th>Customer Intimacy</th>
<th>BI for All</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Provide LOB and Country autonomy. Allow for customizations as demanded by BU's.</strong></td>
<td>IT Simplification, Standardization &amp; Consolidation One Global IT Consolidate Data Centers &amp; Bus Proc.</td>
<td>Unify customer-facing processes and customer data by implementing Global CRM (GCM).</td>
<td>Implement Global BI. Move from BI tools to pre-packaged BI solutions for sales, mktg, &amp; financial analytics accessing one Corp WH.</td>
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<td></td>
</tr>
<tr>
<td><strong>Replicated / Business Silos</strong></td>
<td><strong>Unified / Std Technology + Optimized Core</strong></td>
<td><strong>Unified / Optimized Core</strong></td>
<td><strong>Unified / Dynamic Strategy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maximize ROI at an LOB/Country level.</strong></td>
<td><strong>$1B Cost Reduction Foundation for Growth ERP Standardization Fix RevRec issues</strong></td>
<td><strong>Global Campaign to Opportunity to Quote customer-facing process One Customer View Foundation for BI</strong></td>
<td><strong>Better marketing, sales, and financial decision making</strong></td>
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<tr>
<td><strong>Customize &amp; optimize local apps for BU needs</strong></td>
<td><strong>Standardize on EBS Implement Global Single Instance via Apps Rationalization</strong></td>
<td><strong>Standardize on Siebel CRM 8.0. Implement GCM. Integrate BP for Opportunity (Siebel CRM) to Quote (EBS)</strong></td>
<td><strong>Create BI solutions using OBI EE/Hyperion with Siebel CRM, EBS Suite, and ODI. Implement Global BI using a phased approach.</strong></td>
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<tr>
<td><strong>Maintain data for BU needs. Rollup data to corporate level as required.</strong></td>
<td><strong>Implement Global Info System via Info Rationalization and DW centralization</strong></td>
<td><strong>Provide one source of truth Customer DW that integrates data from multiple sources</strong></td>
<td><strong>Provide a Global Corporate WH with data feeds from EBS GSI, CRM GSI, and other sources.</strong></td>
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<td><strong>Optimize platform for individual applications &amp; data access via tuning configurations</strong></td>
<td><strong>Move to shared services model. Standardize H/W &amp; S/W. Operationalize.</strong></td>
<td><strong>Optimize platform in Austin Data Center on Linux.</strong></td>
<td><strong>Optimize platform in Austin Data Center on Linux and RAC. Secure data.</strong></td>
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<td><strong>Strategic Roadmap</strong></td>
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Building A Sustainable Architecture

Governance Model

- Projects Engagement Model
- Architecture Board

- Architecture Vision
- Current State
- Future State
- Enterprise Architecture Governance
- Strategic Roadmap
- Business Case
Governance Model

Anticipate and Design-in Governance

People
- Business stakeholders
- Avoid the “Ivory Tower”
- Align incentives to compliance

Process
- “Just Enough”
- Integrate with corporate and IT governance
- Effective communication plan

Portfolio
- Establish an EA repository
- Portfolio and project management tools
- Compliance monitoring tools
Building A Sustainable Architecture

Using a Practical Approach

- Aligns IT to Business
  - Executive communications
- Full EA Lifecycle
  - TOGAF and FEA Based
- Includes Best Practices
  - Proven methodology

Oracle Architecture Development Process
Agenda

- Oracle and EA
- How to Build a Sustainable Architecture
- Oracle EA Assets

Gaining Operational Excellence and Strategic Agility through Enterprise Architecture
Oracle EA Repository

Oracle Enterprise Architecture Framework
Business Architecture

Capability Model for Retail

Analytics
- Customer Demand & Enterprise

CRM & Marketing
- Loyalty
- Call Center
- Sales
- Field Service
- Web Store
- Marketing
- Order Mgmt
- Pricing
- CTO

Business Operations
Supply Chain Planning
- Replenishment Optimization
- Advance Inventory Planning
- Supply Network Optimization
- Value Chain Collaboration
- Value Chain Allocation

Supply Chain Execution
- PIM
- Sourcing
- Warehouse Management
- Transportation Management
- Home Delivery

Merchandise Planning & Optimization
- Merchandise Financial Planning
- Assortment Planning
- Item Planning
- Category Mgmt
- Price Optimization
- Promotion Planning & Optimization
- Demand Forecasting

Merchandise Operations
- Trade Management
- Invoice Match
- Merchandise Management
- Price Management
- Sales Audit

Store Operations
- Point-of-Sale
- Store Inventory Mgmt
- Returns Management
- Workforce Scheduling
- Learning Mgmt
- Store Helpdesk
- Workforce Comms

Corporate Administration
- EPM
- Financials
- Human Resources
- Real Estate
- Indirect Procurement
- Projects
- Compensation
- Helpdesk
- HR
- IT

Infrastructure
- Integration and Collaboration
- Servers, Storage, Networks
Best Practice Industry Processes

Example Industries…
Applications Architecture

Industry Process Repository

7. EA Repository

Cross Industry Processes
Technical Architecture

Oracle Reference Architecture
Key Takeaways
Leverage Oracle’s Portfolio of EA Assets

**People**
Certified Architects, Experienced Advisors

**Process**
Best Practices, Practical Methodology

**Portfolio**
Tested Principles, Trusted Artifacts
To Learn More

• See Oracle EA Projects

• Engage with Oracle EA’s
  – Visit Facebook and LinkedIn

• Visit the Oracle Technology Network (OTN) Architect Center on oracle.com
  – www.oracle.com/goto/EA-Welcome

• Use our EA & Architecture Artifacts
  – www.oracle.com/goto/itstrategies

• Blog along with our Oracle Enterprise Architects at blogs.oracle.com

• Learn about Oracle EA Services
  – www.oracle.com/goto/EA-Services

• Attend Oracle EA and Architect Events
Thank You

Please take a moment and fill out our survey about this webcast.
Appendix

• Oracle EA Services
• Oracle EA Framework Example
• Oracle Reference Architecture Library
“We couldn’t have made as clear a business case without the Oracle Consulting teams, including the Oracle Enterprise Architecture development program, Oracle Advanced Customer Services, and the Oracle Insight program. They determined what we had and how to reframe it in our new reference architecture.”
Oracle EA Services Portfolio
Ensures Alignment & Optimization of IT Investments

- Oracle Architecture Service Center
- Oracle Architecture Advisory Services
- Application Strategy & Roadmap
- Information Management & Governance
- Cloud Architecture & Advisory Services
# Oracle EA Services Engagements

## Enterprise Architecture Methods
- Refine EA role & responsibility
- Organize overall accountability
- Bridge business & IT strategy

## Business Architecture
- Refine capability models and metrics
- Connect business model to EA vision
- Guide industry best practices

## Information Architecture
- Re-engineer core business processes
- Master data management
- Improve analytics & information quality

## Applications Architecture
- Rationalize portfolio & roadmaps
- Guide services, EDA & BPM strategy
- Applications evolution roadmap

## Governance Architecture
- Establish processes & metrics
- Oversee governance operations

## Technical Architecture
- Server consolidation (RAC-Exadata)
- Enterprise security (DB-Identity)
- IT-as-a-Service (DB-aaS, PaaS, IaaS)
Architecture Center of Excellence

*Delivers Consistent EA Execution*

- Across Projects
- Across Technology
- Across Teams
“The output was fantastic. I have to admit I was skeptical that a vendor could do an impartial review of our IT architecture that didn’t evolve into a sales pitch. This was an extremely professional and worthwhile exercise that has changed our perception of Oracle as a partner and not just a vendor.”
Establishing an EA Roadmap

EA Observations and Analysis

• Business Architecture
• Application Architecture
• Information Architecture
• Technology Architecture

Oracle Enterprise Architecture Framework
An Example:
Complete Architecture Vision

- **Business Strategy**
  - Mergers & Acquisitions
  - Operational Excellence
  - Corporate Governance
  - Innovation

- **Operations**
  - Enterprise Resources
  - Supply Chain
  - Human Capital
  - Customer Relations
  - Enterprise Performance
  - Industry Processes

- **Management**
  - **0101's Information**
    - Customers
    - Products
    - Suppliers
    - Sites

- **Technology**
  - User Interface
  - Middleware
  - Database
  - OS & VM
  - Servers
  - Storage

- **Governance**

- **ORACLE**
# Current State Summary

## Business Goals
- Provide Better Customer Service in growing markets
- Operational Efficiency at lower cost

## Organization Structure

### Company
- Business Services
- Product Division A
- Product Division B
- IT Services

## Applications
- After corporate re-structuring, all major applications are Integrated.
- Need Portfolio Rationalization as a roadmap to Fusion Apps
- Unable to meet Performance SLA
- Lack of Real-Time Reporting

## Key Processes
- Lead-To-Service Engagement
- Lead-To-Order
- Order-To-Ship
- Call-To-Resolution

## Core Applications
- Front Office: SFDC, Oracle Service Management
- Back Office: Oracle ERP (Financials + HCM), Supply Chain Management

## Gaps
- Employee Self-Service for HR
- Project Portfolio and Resource Mgmt.
- EPM
- Data Integration – Lack of ETL standards, MDM/Data Cleansing Strategy, 2 hour batch window for e-Commerce to back end
- Reporting/BI – Multiple reporting tools, Ad-hoc reporting off Transactional systems impacts performance, Lack of Daily BI
- Content Management – No CMS; Large data growth in transactional systems as a result of storing unstructed documents
- Portal – Oracle Portal for internal and external – Ziorly static content, not very customizable ; Custom J2EE for e-Commerce

## Information
- Data Integration – Lack of ETL standards, MDM/Data Cleansing Strategy, 2 hour batch window for e-Commerce to back end
- Reporting/BI – Multiple reporting tools, Ad-hoc reporting off Transactional systems impacts performance, Lack of Daily BI
- Content Management – No CMS; Large data growth in transactional systems as a result of storing unstructured documents
- Portal – Oracle Portal for internal and external – Ziorly static content, not very customizable ; Custom J2EE for e-Commerce

## Technology
- Middleware – 3 App Servers (OAS, JBoss, Silverstream); BPEL 10g used with B2B for data integration/transformation
- Database - Oracle 10g for EBS – 2 environments to support Reporting/Archiving; 8.1.7 for PSFT; HA is Active-Passive
- Operations – EM Grid Control, Quest used for db monitoring, Problem diagnostics/resolution is reactive, Lack of load/functional testing tools, Isolating performance issues down to specific applications/modules is time consuming
- Infrastructure – EBS running on PRIMEPOWER 850 server (32-cores) running SPARC64/Solaris; Heavily loaded with >75% utilization; Need to provide elastic scalability
# Future State Summary

## Business Goals
- Provide Better Customer Service in growing markets
- Operational Efficiency at lower cost

## Organization Structure
- Company
  - Business Services
  - Product Division A
  - Product Division B
  - IT Services

## Business

### Applications
- Meet/Exceed Performance SLAs (e.g., offloading reporting from transactional Apps, shrinking 2hr batch, real-time reporting)
- Fusion Applications adopted after rationalizing current portfolio.

### Information
- Data Integration – Well Defined ETL Strategy - ODI Suite for ETL/Data Cleansing and reducing batch windows, MDM
- Reporting/BI – Standardize OBIEE, Offload Querying using Golden Gate Replication, Daily BI/Scorecards
- Content Management – Externalize unstructured content to Oracle UCM; Automate paper-based document workflows with IPM
- Portal – WebCenter for internal, external, E-Commerce portals – personalization, dynamic content, process, collaboration
- Security / Identity & Access Management – Right people have right access to the right information at the right time (encrypt/mask sensitive data using technologies like TDE and Data Masking)

## Technology

### Standardize Technology Architecture
- **Portal**
- **SOA**
- **CMS**
- **BI**
- **Application Grid**
- **Database Grid**

### Key Processes
- Lead-To-Service Engagement
- Lead-To-Order
- Order-To-Ship
- Call-To-Resolution

### Core Applications
- Front Office: SFDC, Oracle Service Management
- Back Office: Oracle ERP (Financials + HCM), Supply Chain Management

### New Capabilities
- Employee Self-Service Portal
- EPM
- Project Portfolio and Resource Mgmt.

### Business Goals
- Provide Better Customer Service in growing markets
- Operational Efficiency at lower cost

### Infrastructure
- **Middleware** – Consolidate multiple Application Servers to WebLogic Server that serves as a foundation for the Application Grid.
- **Database** - Upgrade EBS to Oracle 11g and leverage capabilities like Advanced Compression, Database Grid - RAC for Active-Active HA, ASM
- **Management** – Consolidate management tools to Enterprise Manager for Application-To-Database monitoring and diagnostics, Proactively resolve problems by defining SLAs in EM and get alerted when thresholds exceed limits (e.g., RUEI, Java Diagnostics), Use Oracle Application Testing Suite for Load/Functional Testing
Prioritized EA Initiatives

1. EBS Query offloading using Golden Gate replication to improve performance
2. Upgrade EBS to 11g to leverage capabilities like Advanced Compression
3. Deploy EBS on Database Grid Architecture
4. Enterprise Manager for Application Grid - Database monitoring and diagnostics
5. Standardize on Oracle BI Foundation for Enterprise Reporting and EPM
6. Oracle Service Management Application - Performance tuning / health check
7. Enterprise Manager for Application Quality Management (Load/Functional Testing)
8. Externalize unstructured content to Oracle Enterprise Content Management
9. Add Project Portfolio and Resource Management capabilities
10. HR Application portfolio rationalization
11. Web Content Management to manage Software Downloads

(Phase 2)
12. Consolidate/Standardize to WebLogic Server Application Grid platform
13. WebCenter for internal, external, E-Commerce portals
14. Upgrade to SOA 11g and evolve to a more mature SOA Architecture (batch-based to SOA-based)
15. Automate paper-based document workflows using IPM
16. ODI for ETL/Data Cleansing and reducing batch windows

(Phase 3)
17. Encrypt/Mask sensitive data using data masking and Transparent Data Encryption
18. Focused Security/IDM Insight
<table>
<thead>
<tr>
<th>#</th>
<th>Technology Focus Area</th>
<th>Technology Benefits</th>
<th>Business Benefits</th>
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</thead>
</table>
| 1  | EBS Query offloading using Golden Gate replication | Improve OLTP Performance                                                             | • Better Customer Experience  
                                • Real-Time Reporting for Better Business Insight |
| 2  | Upgrade EBS database to 11g                       | Leverage new capabilities like Advanced Compression and get better performance       | • Better Customer Experience  
                                • Reduce Storage Costs                                                                |
| 3  | Deploy EBS on Database Grid Architecture           | High Availability, Elastic Scalability                                               | Business Agility – add capacity on demand                                           |
| 4  | Enterprise Manager for Application-To-Database monitoring and diagnostics | Single pane of glass to monitor and diagnose problems from Apps down to Database | Operational Efficiency at Lower Cost                                               |
| 5  | Standardize on Oracle BI Foundation for Enterprise Reporting and EPM | Common Enterprise Information model for all data sources for Reporting and Analytics | Better Business Insight with Daily BI, Analytics                                       |
| 6  | Oracle Service Management Application performance tuning / health check | Application Performance Tuning                                                     | Better Customer Experience for Call-To-Resolution                                      |
| 7  | Enterprise Manager for Application Quality Management (Load/Functional Testing) | Ensure Application Quality and Performance with end-to-end application testing | Better Customer Experience                                                       |
| 8  | Externalize unstructured content to Oracle Enterprise Content Management | Better manage the growth of unstructured content like POs, Invoices etc outside the core application db | Operational Efficiency at Lower Cost                                               |
| 9  | Add Project Portfolio and Resource Management capabilities | Fill in a functional gap                                                | Better Customer Experience                                                    |
| 10 | HR Application portfolio rationalization          | Standardize /Simplify the core HR applications                                      | Enhance Employee Productivity                                                     |
| 11 | Web Content Mgmt to manage Software Downloads      | Retire Novell Director that is being EOL                                          | Better Customer Experience                                                     |
| 12 | Consolidate/Standardize to WebLogic Server Application Grid platform | • Reliability, Availability, Scalability, Performance  
                                • Foundation for Fusion Apps                                                   | Reduced Operational Cost, Elastic Scalability                                       |
| 13 | WebCenter for internal, external, E-Commerce portals | Personalization, Dynamic content, Collaboration                                    | Employee Productivity, Customer Experience                                        |
| 14 | Upgrade to SOA 11g and evolve to a more mature SOA architecture | Move from batch to real-time shrinking the batch windows from e-commerce to back-end systems | Better Customer Experience                                                   |
| 15 | Automate paper-based document workflows using IPM | Automate the image capture and workflow associated with paper-based documents like Invoices | Operational Efficiency at Lower Cost                                                |
| 16 | ODI for ETL/Data Cleansing and reducing batch windows | • EL-T based data movement provides better performance  
                                • Data Integrity, Cleansing, Enrichment (eg Customer)                             | Better Customer Experience                                                     |
| 17 | Encrypt/Mask sensitive data using data masking and Transparent Data Encryption | Non-production environments have access to meaningful masked sensitive data like SSN with referential integrity | Compliance – SOX, PCI                                                              |
| 18 | Focused Security/IDM Insight                      | Sample capability: self-service password resets                                     | Enhance employee productivity                                                     |
Reference Architecture Library

From Principles to Patterns

IT Strategies from Oracle

- SOA
- BPM
- EDA
- BI
- Cloud Computing
- ...

Technology Perspectives

- Enterprise Technology Strategies

Enterprise Development

- Interaction
  - Business Processes
  - Business Services
  - Application Infrastructure
- Information Assets
  - Information Management
- Shared Infrastructure

Oracle Reference Architecture

Enterprise Security

Enterprise Management

- Financial Services
- Utilities
- Public Sector
- Life Sciences
- Communications
- ...

Industry Perspectives

- Industry Architectures
- Industry Solutions
- Technology Patterns

- Technology Architectures
- Practitioner Guides
- Maturity Models

- Architecture Concepts
- Principles & Guidelines
- Architecture Views
- Component Drilldowns
- Product Mappings
Services Reference Architecture

From Principles to Patterns
“IT Strategies from Oracle”

What is it?

• A reference library of EA and solution architectures
  – Written by Oracle architects
  – Endorsed by Oracle product development

• Reference architectures covering Oracle products
  – Yet, product and vendor neutral
  – Spans horizontal technology and industry verticals
  – Includes Oracle product mapping

• Pragmatic guidance and approaches for applying important technology strategies
  – SOA, BPM, EDA, …
“IT Strategies from Oracle”

How can you use it?

• Helps organize the complex product landscape
  – Cross-product reference architecture
  – Augments product documentation

• Holistic approach to technology adoption
  – Not just a tactical product deployment
  – Increase your understanding, capability, and competency

• Reduces risk
  – Proven architecture, proven solution approach

• It’s Free!
  – Free download at: www.oracle.com/goto/itstrategies
“Mastering enterprise-class architecture requires experience in organizational politics, governance, as well as sophisticated technology patterns. The IT Strategy reference library provides essential perspectives to being successful at all three.”

Amit Zavery
VP Product Management,
Oracle Development
Hardware and Software
Engineered to Work Together

ORACLE®