Lost in the Transaction: S317061
Managing Business Transactions Across Distributed Systems

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VP, Product Management
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Program Agenda

• Quick Overview of Oracle Business Transaction Management
• Two Customer Case Studies
  – Healthways
  – Farmers Insurance
• Wrap Up / Q&A
Business Transaction Management
Today's Applications: Distributed across Diverse Infrastructure
Today's Applications:
Support Distributed Business Transactions

Health Claim Processing Transaction
Today's Applications:
Support Distributed Business Transactions

[Diagram showing components such as Appliance, Process Engine, Service Bus, DBMS, and Partner and Cloud connected for CRM Transaction]
Business Transactions: The Key Problem for SOA

• Transactions prone to vanish without a trace because of delays, failures, errors
  – IT staff typically unaware until end-user complains
  – No single source for status of each transaction
• Problem diagnosis and managing exceptions is laborious, high mean-time-to-resolve
  – Manual effort, based on log mining
  – 80% of effort spent merely isolating the issue
  – Diverts valuable developer resources to IT fire-drills
• System-centric monitoring is not sufficient
  – Lacks critical business context
    – Customer name, order size, part numbers
  – Ignores a range of business-oriented errors & faults
Oracle Business Transaction Management (BTM) Provides Tracking Transactions across SOA

- Real-time tracking of each transaction
- Follows transactions across all infrastructure and applications
  - App Servers, Applications, ESB's, BPM's, Etc.
- Leverages message content – the business value flowing through the application
- Provides this without modifying or tagging the messages
  - Message Fingerprinting
  - Non-invasive; doesn’t break applications
Mapping Dependencies
Real-time view of application across components
Mapping Dependencies
Across JVMs, Platforms, Processes, and Technologies
Measuring Transaction Performance
Meeting Agreements on Responsiveness, Availability & Throughput

- **Performance Metrics**
  - Availability
  - Throughput
  - Response time
  - Etc.

- **Historical Reporting**
  - Monitor against baselines and thresholds

- **Service Level Agreements**
  - Monitor against baselines and thresholds

- **End-to-End**
  - Enforces agreements in real time
  - Enables preventative and corrective actions
    - Not just reporting violations after its too late

- **Process Engine**
- **Service Bus**
Monitor for Exceptions
Detecting Exceptions in Real-time

- Continuously evaluates critical transactions
  - Flexible instrumentation model: doesn't require visibility into every step

- Detects Exceptions both Business & Technical
  - Stalled processes, missing steps, dropped transactions
  - Business errors, such as credit denied, orders over $1M, shipment longer than 7 days
  - App faults, protocol errors

- Notifies stakeholders, invoke other systems – trouble ticketing, other exception handlers, etc
Monitor for Exceptions
Quickly pinpoint errors

- Transaction History
- Message Flow - Per Transaction

- Drill into Transaction Content & Context
- Eliminates costly manual search through log files across containers
  - Unified view of transaction across different keys, IDs, etc.
- Inspect related request/response pairs for entire flow
Leverage Business Context
Ad-hoc searching across logged business transactions

- Locate transactions based on monitored and logged information
- Comprehensive searching
  - Business content & context – order #, customer name, etc.
  - Time range
  - Specific faults
- Look for specific conditions such as slow response times or faults as well as broad textual content
- Optimize search on specific, frequently used attributes

**Transaction History**

<table>
<thead>
<tr>
<th>Order</th>
<th>Store</th>
<th>Date</th>
<th>Amount</th>
<th>Status</th>
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<tbody>
<tr>
<td>12-105</td>
<td>Borders</td>
<td>02-15-09</td>
<td>$4,600</td>
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<td>$9,304</td>
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<td>14-843</td>
<td>Barnes</td>
<td>02-22-09</td>
<td>$11,938</td>
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<td>$21,103</td>
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<td>Amazon</td>
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<td>42-308</td>
<td>Borders</td>
<td>03-14-09</td>
<td>$23,901</td>
<td>OK</td>
</tr>
</tbody>
</table>
Customer Examples

• Farmers Insurance
• Healthways
Managing Business Transactions Across Distributed Systems

Suresh Murthy, SOA Architect
September 2010
AGENDA

1. Farmers Insurance - General Information
2. Farmers SOA Overview
3. Farmers Oracle-BTM Setup
4. Farmers Oracle-BTM Usecases
5. Lessons Learned
6. Q & A
Farmers Insurance - General Information

- Wholly owned subsidiary of Zurich Financial Services
- Founded in 1928, Headquartered in Los Angeles and doing business in 41 states
- Diversified product portfolio
  - Auto, business, homeowners, life & specialty insurance
  - Financial services (e.g., annuities, IRAs, 529 plans, etc.)
- Serves more than 15 million customers
- 20,000 employees (approx)
- Strategic business unit within Zurich’s $50 billion global operation
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Farmers SOA Overview

- In 2007, Zurich rolled out an enterprise-wide SOA initiative known as ZSOA
- Goals of the initiative
  - Accelerate time to market for new products & services
  - Improve operational efficiency & flexibility
  - Provide LOBs with visibility into projects going on across the Zurich enterprise
  - Reduce the IT cost structure
- In addition to providing a shared physical infrastructure, ZSOA is used to:
  - Define the strategic direction of SOA across Zurich
  - Define the policies, procedures, frameworks and standards for service development
  - Define how services are implemented and governed
- As part of the initiative, Farmers SOA Competency Center is established to realize the SOA within Farmers
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Need for Business Transaction Management (BTM)

- Enable support for different types of service level objectives
- Manage and enforcing the policies.
- Alerts & Notifications

- Deployable to a ZFS standard infrastructure
- Provide platform coverage for different ZFS service providers
- Integrate with the ZSOA infrastructure.

- Provide support for proactive monitoring & alerts
- Support corrective actions on errors/exceptions.
- Provide deep–dive service diagnostic facilities

- Provide standard out of the box reports
- Enable report customization
- Provide a role-based access to the reports or portal
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Oracle-BTM for Online Insurance Verification

- **Requirements:**
  - To provide a service for online insurance verification to the Department of Motor Vehicles.
  - Log every message as part of compliance
  - Service needs to be available 99.9%
  - Service needs to respond within 2secs.

- **Oracle BTM Solution:**
  - Logs each and every message.
  - Notifies incase of service performance degradation.
  - Send alerts when the service is either partially or completely not available.
  - Correlates the messages to provide individual system response times.
• **Requirements:**
  – System provides the billing to the online consumers and agents through the service interface.
  – Availability of the services are very critical.
  – Needs an ability to audit all the business transactions.
  – Service SLA are utmost important having not more than 2-5 seconds response time.

• **Oracle BTM Solution:**
  – Send alerts when services are either partially or completely not available.
  – Trace request and response messages improves the defect turn around time.
  – Provides Transaction reports that violates the SLAs.
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Lessons Learned

- BTM tool is necessary before implementing any distributed enterprise strategy such as SOA, Cloud.
- Oracle-BTM tool is not a replacement for the Systems Management tool instead it complements the existing System Management tools.
- Automate the tasks of Registration, Management and Monitoring of Business Transaction using Oracle BTM.
- Involve the BTM team early in projects would help in realizing the potential of BTM tool.
- Communication and Collaboration between the development and BTM team is key to successful BTM tool deployments.
Q & A
Kevin Forbes
Enterprise Architect
Healthways
Healthways' solutions help healthy individuals stay healthy, mitigate and slow the progression of disease associated with family or lifestyle risk factors and promote the best possible health for those already affected by disease.

- The industry’s leading provider of specialized, comprehensive Health and Care Support solutions
- More than 50 million members nationwide
- FY2009 revenues of $670 million
- 2010 CIO Magazine Top 100 (Enterprise Architecture)
- # 35 on the Information Week Top 500 for 2009
Key Technologies

- Database-Oracle 11G (RAC)
- Distributed Data Grid-Oracle Coherence
- Service Platform-.Net Framework 3.5 (WCF)/IBM Message Broker
- Enterprise Service Bus- IBM DataPower/Message Broker
- Runtime Governance- Oracle BTM (aka "AmberPoint")
- Enterprise Decision Management- Blaze Advisor
- Web Portal- IBM WebSphere
- Security- Oracle Identity Management
• Extremely Complex Service Oriented/Event Driven Architecture
• 25 million+ messages/day
• Mixed environment of service/ESB platforms
• Grid Everywhere environment requires a capable monitoring/management infrastructure
Services Snapshot
BTM Benefits

- Tremendous ROI – eases pain of troubleshooting complex service interactions and runtime exceptions
- Real-time notification allows us to address technical issues before they become "business issues"
- Heterogeneous platform support gives us architectural flexibility – not "just for Oracle"
- Oracle acquisition of AmberPoint allows us to now manage the majority of our environment from a single console (Grid Control)