The Development Challenges of SOA

Why Software Configuration Management is so Important to your Organization

Unisys Technology Forum, Queenstown, NZ
Agenda

- The Future State of your Applications
- Services Oriented Architecture (SOA)
- The role of Software Configuration Management (SCM)
- ClearPath Application Development Strategy
- Using SCM to gain Enterprise Visibility
- Example & Demonstration
The Future of your Applications

• Need to shift future investments toward innovation instead of maintenance by transforming strategic business applications

• How will ClearPath applications be part of your SOA initiative?

• Do you have a preference - .NET, J2EE?

• How will you manage these composite applications in development?
Service Oriented Architecture

• SOA is about business value and productivity, not technology

• SOA is about enabling business change
  – Speeds business change
  – Facilitates business connections
  – Enhances business control

• SOA is about business design
  – Identifies a strategic set of business services
  – Creates a digital model of business capabilities that is a foundation for business flexibility
The Challenge—IT/Business Alignment

Business Strategy

IT Strategy

Business Processes
Enterprise Applications
Platform Infrastructure
The Evolution to Service-Oriented Applications


Business functionality buried in applications, process silos... proprietary interfaces

Service-Oriented Applications (2004-)

Business functionality exposed as services ... standards-based, shared services
SOA is Based on “Business Services”

A business service is a common unit of work
– Maps to business processes
– Defined in business terms
– Coarse grained
The Promise of SOA

- Integrate a merger or acquisition
- Introduce a customer self-service portal
- Create single views for cross-selling
- Accelerate delivery of new applications
- Enforce compliance

Mitigate Risk

Respond to Change

Visibility

Trust Control

Differentiate

Control Costs

Drive Revenue
3D-VE provides a framework and methods to model services at the Business Process, Application, and Infrastructure layers, creating a robust and aligned SOA implementation across the enterprise.

3D-VE provides the visibility to identify and define services at the Business and Technology layers.

3D-VE Consumer

3D-VE Business Process Architecture

3D-VE Service Architecture

3D-VE Component Architecture

3D-VE Technology
Unisys SOA Reference Architecture
The Role of SCM in SOA

• SOA Business Services are naturally heterogeneous

• Failure to use best-in-class solutions will expose the business to reduced revenue and client dissatisfaction
  – Application deployment failures will escalate rapidly without a corresponding change in management solutions

• Process transparency and enforcement is needed to discipline the organization while keeping distractions to a minimum
  – Automating formerly manual tasks frees resource for business investment
  – Gives developers back their creative freedom
What Is SCM?

Software Configuration Management is the process of controlling the entire lifecycle of application development from project start through deployment across your enterprise.
Why is Software Configuration Management Important?

- Applications requiring 7x24x365 availability
- Reductions in IT Budgets
  - Do more with less
- Skills availability
- Regulatory changes / Audit Requirements
- Competitive pressures
- Application Deployment Failures
  - Production recovery very costly
  - Loss of market share / image / revenue
- Emergence of SOA strategies as a mega trend
Business Challenges.

- Accelerated Time-to-Market / Services Pressures
- IT leveraged to drive business benefits and market differentiation
  - Customized business processes
  - Unique packaging / pricing
  - Partnering for strategic advantage
- New business channels
  - Mergers a large impact
- Speed and quality are contradictory… but necessary
IT Issues in Application Development.

- Inflexibility -
  - Inability to rapidly adapt to new business needs
  - Lack of common processes across all application architectures / development organizations

- Low IT developer productivity / manual processes
  - Higher costs

- Management control of multiple development technologies for SOA enabling of strategic business applications

- 40% of projects fail to meet objectives (Gartner)
Leveraging Industry Skills & Toolsets

ClearPath Enterprise Development Strategy

- Database Design Tools
- Data Models
- Industry-standard DBMS Interchange Repository
- Eclipse / .NET
- 3rd Party Tools
- Unisys Tools
- Industry IDEs

Enterprise Development Management

Agile Business Requirement Response
Key Attributes of SCM

Visibility

Integrity

Repeatability
Unisys SCM Portfolio

MCP
3GL & 4GL

SURE
MCP
Windows
Unix/Linux

OS2200
3GL

CMplus
OS2200 +
Eclipse
All-in-One
CMplus for Life-Cycle Management

Software Configuration Management

Problem Tracking

Create

Organize

CMplus

Manage

Quality Assurance

Application Building

Application Installation

CMplus for Life-Cycle Management
Eclipse IDE for OS 2200 Composite Applications

Pre-integrated all-in-one package

Mix-n-match functions:
• Modeling
• Coding
• Deployment

Plug-ins:
Unisys-built and off-the-shelf (tested by Unisys)

Web Tools Project

SQLExplorer

COBOL & C code

Telnet Console

OS 2200 Composite Application

Unisys Logging & Diagnostics

ClearPath Resident Data
SURE

• An enterprise-wide Software Configuration Management solution for:
  – ClearPath MCP
  – Windows, Linux, Unix (NET, Eclipse, J2EE)

• Automation improves quality while speeding development

• Lowers the risk of a development project not meeting business goals

• Supports regulatory compliance

• Infrastructure for a common, repeatable development process

• Controls both development and deployment for the total environment
SURE for MCP Development
Ideal for Composite Applications

Visual Studio.NET
Unisys Programmer’s Workbench
3rd Party Solutions
Eclipse

SURE
Microsoft SCC API
Task Management
Source Management
Eclipse CVS API
Automated Workflow Management
Application Deployment
Development Artifacts
SURE - Explorer User Interface

Leverage Industry Skills

The DCIS software should not do any calls on the service-library
Install does not work if family DISK is not available
Give a verification warning if a person tries to check-in a file on another PC
File COMPARE: when the file is in use by another person, then the PC-file
It is not possible to delete a copy-file if that copy-file is still in use. SfW
Build command with lines longer then 80 characters are seperated with CR/LF
Implementation integrated eBusiness function
At installation, a file *respect/titles is present pointing at (simondev)INFDB,
Install with option 'copy infdb from tape'.

New Users Productive in 4 hours
Integrity

Insure that heterogeneous components of projects are completed at the same time as planned

Task = Logical Unit of work

All subtasks must complete

Tasks are moved not files

Automation not manual processes

Subtasks
Team Organization and Roles

- Link user to team
- Link team to project
- User works for project(s)
- User inherits authorizations
- Link user to employee function
- Link user to employee function
- Link team to project
Your Custom Processes in SURE

1. **ToDo**
   - Task Creation: TeamLeader or DepartmentManager
   - Development: Developer
   - Transfer to INTG: Developer or TeamLeader

2. **Ready**
   - 1 minute
   - DVLP

3. **Testing**
   - Testing failed: Developer
   - Testing failed: ReleaseCoordinator
   - Testing OK: Developer
   - Testing OK: ReleaseCoordinator
   - Transfer Planned to DEME: TeamLeader
   - Transfer Planned to DEME: TeamLeader

4. **Daily Ready**
   - Transfer Daily to DEME: TeamLeader
   - 1 minute
   - INTG

5. **Planned Testing**
   - Testing failed: ReleaseCoordinator
   - Testing OK: ReleaseCoordinator
   - Transfer to PROD: ReleaseCoordinator

6. **Planned Ready**
   - Transfer to PROD: ReleaseCoordinator
   - DEME

7. **Solved**
   - PROD(K3)
   - PROD(GH)
Enterprise Visibility

Graphical DBMS Editors
Industry DBMS Design
DBMS Data Models

Common Warehouse Model

3rd Party + MS Tools
VS.Net

MS SCC

AB Suite
Business Rules
Generate Solution
Deploy

Other 3rd Party Tools (Editors)

Unisys 3GL Tools

Eclipse Tools
Eclipse Framework

Graphical DBMS Editors

Common

Software Configuration Management

SURE
MCP, Windows, Unix/Linux, Word, Excel. Project Files

Readability Score: 2
Environments and Tasks

Independent slots but visibility for team communications and management reporting
Tasks have unique identity for tracability
Reverse direction to resolve issues – test failure for example—move task back to Development
Managing Composite Applications

Coordinating Multiple Projects

More on this in a minute

ClearPath ePortal Web Service via orchestration of multiple transactions

Change Field length in DMSII & Coordinate Reorg

Java SOA wrapper for Cobol Transaction

Software Configuration Management

SURE

MCP, Windows, Unix/Linux, Word, Excel. Project Files
Some Additional Application Management Issues

Using SCM to manage Core Business Application Transformation
Have You Ever Heard Any Of The Following from a Client?

• We want to begin moving to SOA but we don’t know how to update our applications while we run our business

• Our complex enterprise applications are too large and impossible to understand

• So many different people have maintained our applications that we don’t know which parts of the code actually operate and which parts are obsolete

• We need to modify and leverage our applications, but cannot estimate the impact or time to make the required changes

• We do not have enough staff to maintain or modify our applications
COBOL Source

- Document your assets
- Complete asset inventory
- Streamline applications
- Transform applications into services

Repository

Application Profiler

Application Analyzer

Parsers

Business Rule Manager

Transformation Assistant

Enterprise Knowledgebase

Managing Composite Applications
Managing MCP Application Transformation

Holistic Enterprise Framework
Supports Application Development & Transformation
ClearPath ePortal

Building secure deployments of Web Services for SOA Enablement
ePortal Developer

• Microsoft Visual Studio 2005 plug-in
  – Automatic web, mobile and web services solution generation

• Leverages Visual Studio 2005 development capabilities
  – World-Class development environment
  – Simplified and powerful web, mobile, web services development experience
  – Supports of the latest industry standards
Visual Studio 2005
ClearPath ePortal Orchestration
Enterprise-class Blade Platform

- Enterprise-class Blade Platform
- 4U rack mounted chassis each supporting up to 6 blades
- Fully redundant (n+1 power, cooling, network switches, and blades)
- Hot-swap replacement of all major components
- Multiple chassis per system
Personality Module Blade Appliance

- Application specific, enterprise-class blade
- Implemented as "black-box" appliances
- Can be configured into fully redundant “virtual servers”
- Hot-plug replaceable
- Preloaded and configured for optimal performance and security
- Software and configuration centrally maintained
Entry Level ePortal Appliance

- 1U rack-mountable form factor
  - Dual core
- Supports ~800-1000 concurrent users
- Upgrade to enterprise ePortal chassis with minimal downtime/configuration changes
- Retains appliance attributes
  - Secure, auto load/config, performance optimized
- Reduced RAS characteristics
COBOL, EAE / AB Suite w ClearPath ePortal

EAE/AB Suite

Component Enabler

CE Staging Wizard

Stage & Deploy

Common Management

COBOL

ePortal Developer

Stage & Deploy

4Q07 Availability

or
ClearPath ePortal Platform

- Loads the OS, Environmental Software and the Applications automatically
- Pre-configured switches and all network settings
- Flexible hardware provisioning
- Tuned for optimal performance
- "Best-Practices" security implementation/ongoing monitoring
- No single point of failure** – automated network and server failover, automated network and application load balancing
- Automated upgrade process for OS and applications

** Enterprise Only
Management Environment

- Provides browsed-based management
- Point-and-Click simplicity
- Responsible for deployment and monitoring of the run-time solution
- Virtual Server definition and management - single-click deployment
- Software deployment and updates w/zero application downtime
- Consolidated monitoring
SCM Key Benefits

• Enhance developer productivity while retaining choice of tools
• Improve quality while accelerating development to deployment cycles
• Coordinate software changes across distributed environments and tools for SOA projects
• Gain control and flexibility
• Auditor and regulatory compliance reporting
• Manage all enterprise artifacts in a single process model
ClearPath ePortal Deployment & Management Demonstration