Real World Applications Using MDA

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OMG MDA™ Implementers' Workshop: Succeeding with Model Driven Systems

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Abstract

In today's agile business, it's more important than ever to have an enterprise architecture that remains platform independent. True platform independence should provide flexible deployment options including hardware, operating system, languages, middleware and databases. An integrated modeling development environment, combined with automated code generation, provides this flexibility, helping organizations effectively separate their business logic from underlying platform technology. This presentation will describe real-world solutions that were developed and deployed from single models to multiple target platforms and application architectures using tools and methods which support a model driven approach to application development.

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Agenda

- Describe organizations using model driven approach
  - 7 organizations
    - Corporate and government
  - 10 applications
    - Customer care and utility billing
    - Industrial hygiene and medical surveillance
    - Airline customer loyalty
    - Investments
    - Distribution and Financial
    - Child welfare
    - Healthcare
- Summary

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AMX International

- Consulting firm dedicated to the implementation and support of enterprise software solutions (J.D. Edwards' enterprise software solutions)
- Business Need
  - J.D. Edwards utility software users needed improvements due to utility industry deregulation changing all the rules
  - AMX Utiligy™ - a pioneering next generation solution for the utilities industry
    - Completely integrated CIS, customer care and utility billing software solution for both public and private utilities

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AMX International

- New to application development
  - Model driven approach chosen
    - Ability to target multiple execution platforms, databases and environments
    - Insulate developers from platforms
    - Provide “running start” for new platforms
- Execution platforms
  - OS/390, UNIX, NT/Win2000, J2EE
  - Batch, WinAPI GUI, Browser GUI, 3270
- Integration
  - ASP/COM, VB, MS IDE’s
  - Native COBOL, C, C++, HTML
  - Java IDEs
  - Packaged Software: JDE OneWorld

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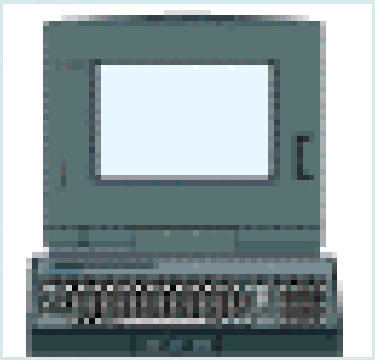
AMX International
Project Technical Architecture



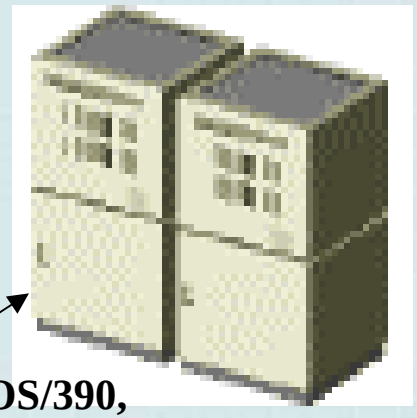
Windows NT/2000

GUI Interface

Web Interface

Tuxedo, Encina, CICS, or IMS/DC

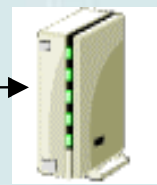
TCP/IP, MQSeries, LU 6.2, or CICS ECI



MS SQL, Oracle or UDB/DB2

OS/390, UNIX or NT/2000 Server

Web Server
IIS



Application Server
JRUN

ASP

Coldfusion

JDE OneWorld

JDE Deployment Server

JDE Enterprise Server

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INEEL

- **Idaho Engineering and Environmental Laboratory**
  - A multi-purpose national laboratory that delivers science and engineering solutions to the world's environmental, energy, and security challenges
  - http://www.inel.gov/
- Applications developed using model driven approach
  - Industrial Hygiene
  - Medical Surveillance
- Environment
  - Distributed client/server
  - IBM OS/390 CICS COBOL DB2 servers
  - Windows clients

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INEEL

- Challenge
  - Decrease in funding
  - Worsening economic conditions
  - Need to move applications off of the mainframe
- Target environments
  - Microsoft Windows C Oracle
  - Microsoft Windows C SQL Server
- Retargeting took 6 weeks

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Unisys

- Worldwide systems integrator
- Created from merger of Burroughs and Univac
- 70% of revenue comes from services
- Two different applications
  - Customer Loyalty System (CLS)
  - Investment Management (MAXIMIS)

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Unisys CLS

- Started life as a frequent flyer model built for Air Canada
  - Same model was sold to Canadian Air and TWA
- Manages multiple customer loyalty programs
  - Frequent flyer, lounge, juniors, seniors, etc.
- Manages all loyalty program promotions
  - Generates targeted promotions based on customer profile information
- Comprehensive customer database
- Manages multiple customer delivery channels
  - Personalized content management
    - Based on language
    - Based on demographics
    - Based on key customer information

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Unisys CLS

- Model converted from 3270 to client/server style
- Many enhancements were made as well
- Challenges
  - Unisys does not own nor operate OS/390, zOS, nor DB2 (they use their own proprietary big iron)
  - First customer was a CICS DB/2 shop
  - Development done on OS/2 using DBM
  - Regenerated application at the customer site targeting CICS/DB2

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Unisys CLS Target Environments

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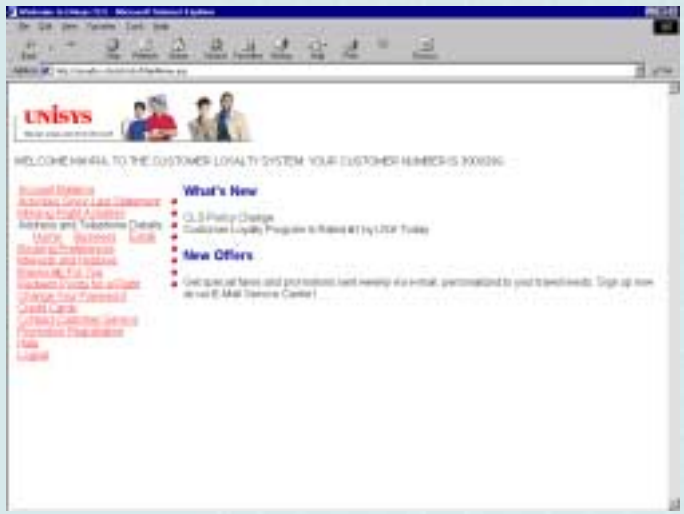
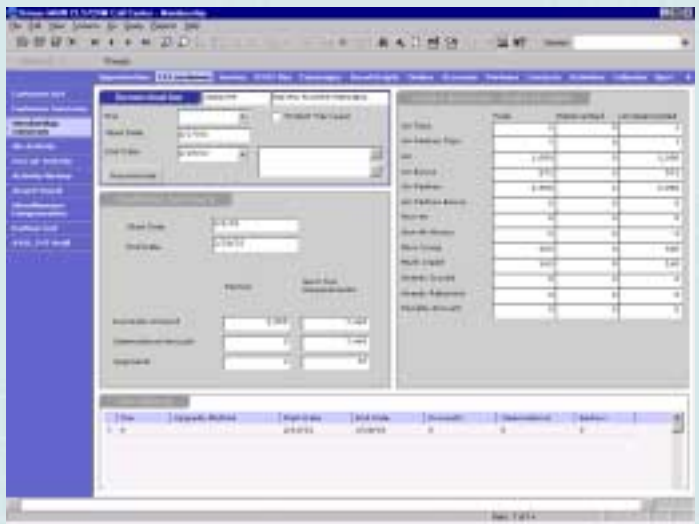
Unisys CLS Single Customer view

Web & Email



WAP & IVR

Call Center



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Unisys MAXIMIS

- Model built to replace CDC IMIS (Investment Management Information System) bought by Texas Instruments
- Application environment: MVS / DB2 / COBOL
- Customer requirements caused retargeting
  - HP-UX / Oracle / COBOL
  - HP-UX / Oracle / C
  - Windows / UDB / C
  - Still block-mode

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Trane

- Provides indoor comfort systems and comprehensive facility solutions for residential, commercial and industrial building needs
- Applications developed using a model based architecture
  - Distribution systems (order entry, warehousing, inventory, shipping, etc)
  - Financial system to handle billing

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Trane

- Original application architecture
  - MVS / COBOL / DB2
  - Block-mode only
- Move off the mainframe to save money
- New target architecture
  - AIX / C / Oracle
  - Block-mode, client (GUI and web) / server
  - Business rule sharing between block-mode and servers

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State of Arizona

- Department of Economic Security (DES) / Office of Technology Services (OTS) and Division of Children, Youth, and Families (DCYF)
  - **Provides services to children and families**
    - **Child protective services**
    - **Family services for families whose children are at imminent risk of out-of-home placement**
- **System to support the child welfare program**
  - SACWIS (Statewide Automated Child Welfare Information System) certified

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State of Arizona

- Application environment
  - Client / Server
  - Windows clients
  - Windows C and OS/390/CICS COBOL servers
- Model being considered for use by 5 other states

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Missouri

- Department of Transportation (DOT)
- Applications developed using a model based architecture
  - Track DOT vehicles, maintenance, reservations, usage info, inspections, warranty, work assignments, etc
  - Allow maintenance crews to locate a stretch of roadway and enter details about work that is to be done

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Missouri

- Original application environment
  - C GUI Client / Server (AIX)
- Target application environment
  - Java Web Client / Server (AIX)
  - Same servers service both GUI and Web Clients

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EDS

- Provides a broad portfolio of business and technology solutions to help its clients worldwide improve their business performance.
- Core portfolio comprises information-technology, applications and business process services, as well as information-technology transformation services.

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EDS *MetaVance*

- Healthcare Administration and Finance product
  - EDS' view of the Healthcare Payer Enterprise available at a model level
  - Our models must "fit" in our customer's extended enterprise architecture
    - Client/Server, J2EE, .Net
- Model driven development
  - Models reflects the business relationships between entities within this domain
  - Developers are gaining an understanding of healthcare by working with the models
- Successful Product - Architecture taxonomy
  - flexibility, extensibility, portability, scalability, performance

EDS

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EDS *MetaVance* – Models in product development

- Flexibility – the model changes – regen the deployment environment for that model
- Extensibility – model for self contained business ‘assets’
  - Business processes, activities, tasks are enabled in business components
- Portability – models are an abstraction of the business and are technology neutral
- Scalability – models can be deployed on “rightsized” platforms
- Performance – logical model layer is seperated from the physical deployment layer

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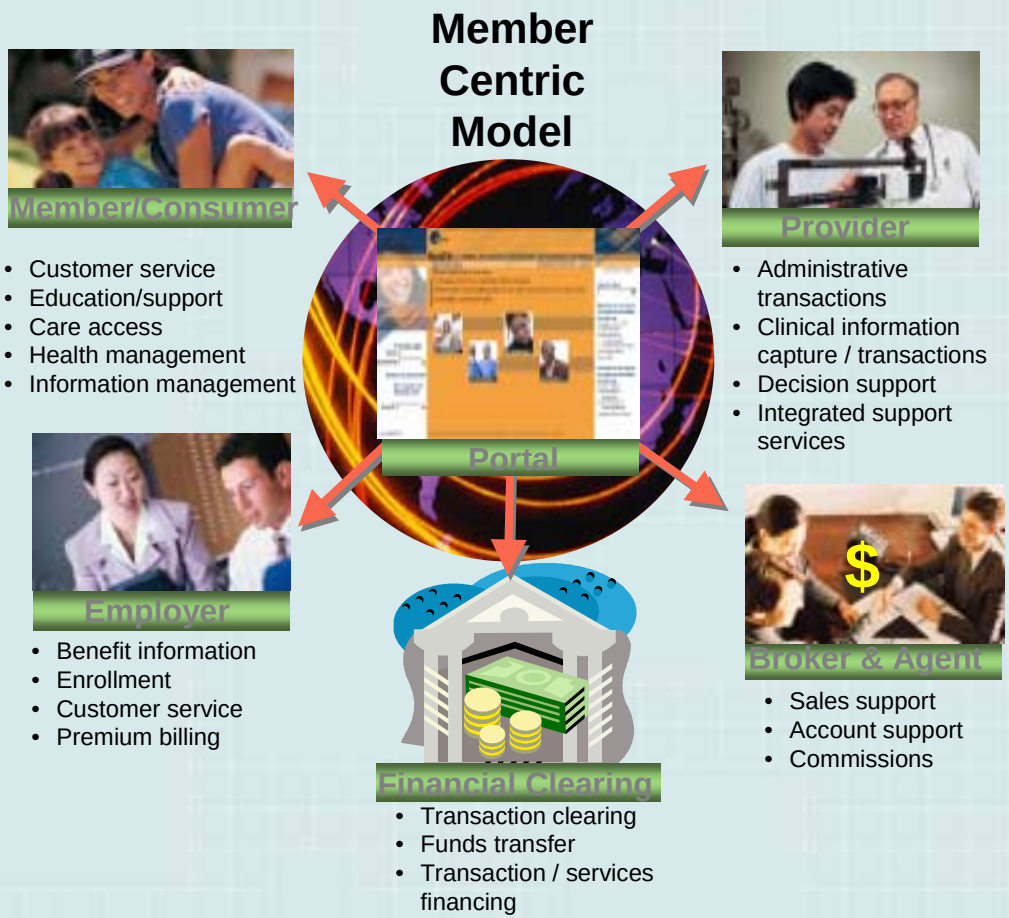
EDS *MetaVance* – Enterprise Architecture

- Current deployment:
  - User Interface Models
    - Windows, HTML
  - Business Services models
    - MVS / DB2 / CICS / COBOL
    - HP-UX / Oracle / CA-TE / C
    - Solaris / Oracle / CA-TE / C
    - AIX / Oracle / CA-TE / C
    - Windows / Oracle / CA-TE / C
- Future deployment
  - User Interface Models
    - HTML, .Net
  - Business Services models
    - J2EE
    - .Net



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Summary

- Discussed real-world solutions
  - Develop and deploy from single models to multiple target platforms and application architectures
  - Used a model driven approach to application development
- Model driven approach highlights
  - Portability
  - Cross-platform Interoperability
  - Platform Independence
  - Productivity

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Questions & Answers

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