CHUBB

Track 7: Performance
Session 770

A Case for a Metal Model Approach
to Data Base Design

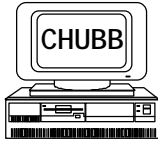Doug Eberle, Chubb & Son Inc.
Carol Johnson, Chubb & Son Inc.

CHUBB

■ Introduction

■ What is "Apex"

■ What is a Meta Model Data Base Design

   – Product Definition

   – Customer Group Management System

   – Policy/Service Management System

■ Benefits, Issues and Challenges

■ Discussion

CHUBB Corporation

- Chubb Corporation

  - Chubb & Son Inc. (Property & Casualty)

  - Chubb Life America (Life & Health)

  - Bellemead Development Copr (Real Estate)

- 3rd largest US - 13th largest Worldwide

- Revenues of $6 billion

- Total assets of $23 billion
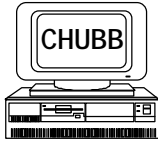
- 100 offices worldwide

- 10,000 employees worldwide

Presenters

- Doug Eberle

  - Business Consultant - 18 years experience in Chubb I/T focusing on consolidating operational information into common information structures

  - ISP and APEX BAA team member, 3 years IEF

- Carol Johnson

  - Data Architect - 16 years experience in Chubb I/T focusing on developing policy rating systems

  - APEX BAA team member, 3 years IEF

Chubb & Son Technical Environment

■ Client / Server Systems

   – OS/2 Clients   'C', 'C++", Smalltalk

   – Local Servers running OS/2 & DB2/2

   – Data primarily centralized on mainframe in DB/2

■ Legacy Systems

   – IMS/DC   Telon, Cobol

   – DBMS - DB2 and IMS

IE / IEF Experience

■ ISP for all of Chubb & Son completed December 1991

■ IEF Pilot project - Policy processing system 1991-1992
IMS/DC - 61 entities; 40 transactions; 110 procedures;
2,600 function points

■ Client Information System   1993 - 1994
IMS/DC - 112 entities; 50 transactions; 120 procedures;
3,800 function points

■ APEX - Commercial Policy System   1993 - 1996 ~ 1999
Client/Server - 410 entities; 390 transactions; 900
procedures; 112,500 function points   [Composer 5.3]
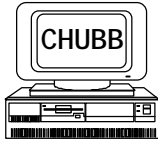
IE / IEF Experience

■ Claims Reengineering   1996 - 1998?

■ Client, APEX and Claims based on a common information architecture

■ Mainframe Encylopedia

■ IEF 5.3 Beta site
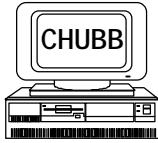
APEX Background

■ Traditional "Stove Pipe" legacy system development

- Integrated Policy Print & "Work in Process" systems

- 13 commercial line of business policy systems

■ ISP recommended Client and Product (APEX) projects

■ APEX timeline

- Product architecture design started 6/92

- System construction started 4/94

- Release 1 implementation scheduled 6/96

- Product definition analysis started 3/92

APEX Business Objectives

■ Provide mechanism for rapid and cost effective development of niche products - for both local and global markets

■ Support all lines of business and all types of transactions

■ Respond quickly and easily to regulatory changes

■ Share information and expertise across the enterprise

■ Promote data integrity and consistency

■ Improve the usability of product systems

   – Reduce operational costs

   – Integrate with desktop and other applications

© Chubb & Son Inc. 1996

APEX I/T Requirements

■ Significantly reduce system development and maintenance costs

■ Eliminate I/T as a critical path (bottle neck) in product development and support

■ Replace all legacy policy systems - Year 2000

■ Provide tools and structure for product development and change management

■ Facilitate technical platform independence

■ Promote reuse of components

© Chubb & Son Inc. 1996
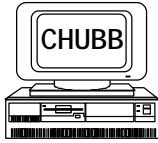
Meeting the Needs

■ Creation of Business Rules Management Architecture

   – Stable rules managed via integrated data structure

   – Dynamic rules managed as instance data

   – Coded rules, where necessary, done as procedure logic

■ Creation of Information Architecture

   – Shared Resources (Client, Location, Subject)

   – Product Definition Information - common components
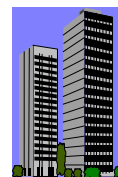
   – Quote / Policy Issuance Information

META MODEL Definition

■ General - Information about data

■ APEX - structured yet flexible method of specifying information about business objects

"I want to call this a residence"

"I want to call this a building"

CHUBB Product Management
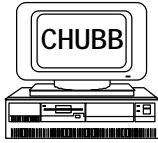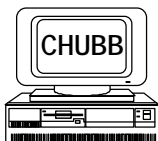
Functionality

(What the system can do)

Business Rules

(What the business dictates)

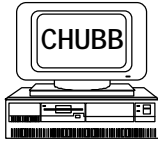# CHUBB Product Management

Functionality

(What the system can do)

Ability to process newlines, renewals, endorsements...
Ability to ask any question

Business Rules

(What the business dictates)

EDP Property requires raised floor information

Product Management

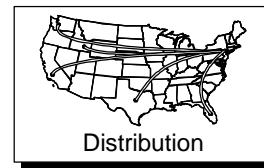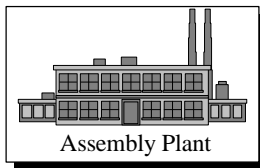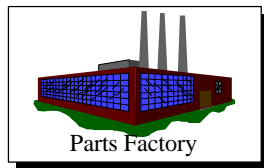### Functionality (Software)

STABLE

Business Rules (Data)

VOLATILE

Product Management

Functionality (Software)

| Parts Factory | Assembly Plant | Distribution |

Business Rules (Data)

VOLATILE

CHUBB Product Management
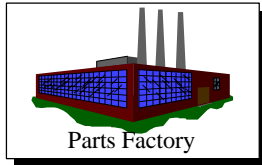
Functionality (Software)

Parts Factory

Business Rules (Data)

Parts

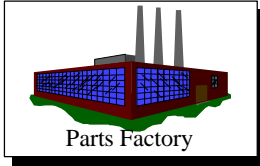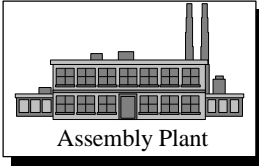# CHUBB Product Management
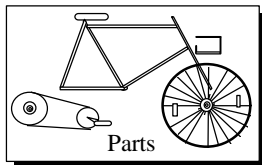
Functionality (Software)

Parts Factory
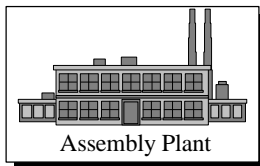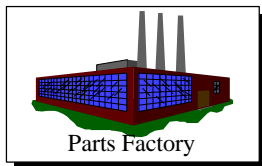
Assembly Plant

Business Rules (Data)
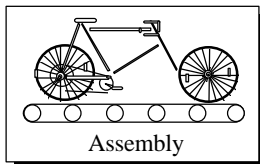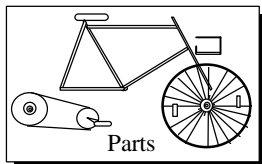
Parts

Assembly

CHUBB

Product Management

Functionality (Software)

Parts Factory	Assembly Plant	Distribution

Business Rules (Data)
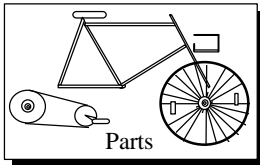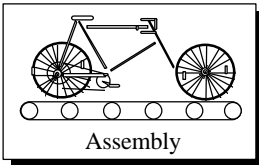
Parts	Assembly	Finished Goods

CHUBB

Product Management

Functionality (Software)
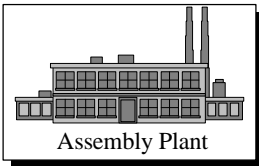
Parts Factory	Assembly Plant	Distribution

Business Rules (Data)

Parts	Assembly	Finished Goods

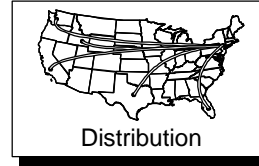| *Practice System*	*Customer Group System*	*Policy/Service Management System*

Concept to Market / Maintenance

CHUBB

Functionality (Software)

| Parts Factory | Assembly Plant | Distribution |

Business Rules (Data)

- General Liability
- Property
    - Building
    - EDP Equipment

■ **Museums**
Make product available to customers in NY and NJ

■ **Museums**
Product is available to customers in NY and NJ

Practice System

Customer Group System

Policy/Service Management System

Customer Support

CHUBB

Functionality

| Parts Factory | + | Assembly Plant | → | Distribution |

Business Rules

| *Practice System* | + | *Customer Group System* | → | *Policy/Service Management System* |

Meta Model

CHUBB

Library

Policy Type
Subject Type

Shared Resources

Client   SIC   Subject
Legal Jurisdiction   Location

"Parts"

Practice System

"Assembly"

Customer Group System

"Distribution"

Policy/ Service Management

Product Definition Work Area

Work Area Activity

Product

Product Policy Type

Coverage Grant Option (CGO)

Product Policy Type Definition

Product

Product Policy Type

Coverage Grant Option (CGO)

Policy Data

Policy Agreement

Coverage Agreement

Quote Work Area

Quote Versions

Quote Policy Agreement

Quote Coverage Agreement

© Chubb & Son Inc. 1996

CHUBB

Meta Model - Subject Type

Building

"Parts"

Building Name
Building Address
Building Type
   Single Occupant
   Multi - Office
   Multi - Dwelling
   Multi - Other
   Vacant
Construction Type
Sprinkler System
   Adequate
   Deficient
   None
Alarm System
Number of Stories
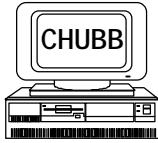Display Casings

© Chubb & Son Inc. 1996

Meta Model - Product Subject Type

Museum Property Insurance

"Parts"

Building Name
Building Address
Building Type
    Single Occupant
    Multi - Office
    Multi - Dwelling
    Multi - Other
    Vacant
Construction Type
Sprinkler System
    Adequate
    Deficient
    None
Alarm System
Number of Stories
Permanent Display Casings

"Assembly"

Building Name
Building Address
Construction Type
Sprinkler System
    Adequate
    Deficient
    None
Alarm System
Number of Stories
Permanent Display Casings

Meta Model - Subject
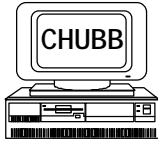
"The Frick Museum"

"Assembly"

Building Name

Building Address

Construction Type

Sprinkler System - Adequate Deficient None

Alarm System

Number of Stories

Permanent Display Casings

"Distribution"

The Frick House

20 East 70th Street
New York, NY 10017

Masonry Non-Combustible

Adequate
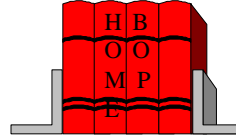
Both Local and Central

3
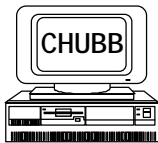
Wall Mounted Glass

CHUBB

Meta Model - Coverage Type

Property Policy Coverages

"Parts"

Building
Debris Removal
Newly Acquired Collections
Trees, Lawns, Shrubs and Topiary
Broadcast Towers and Antennas
Underground Storage Tanks

HOME
BOMP

CHUBB

Meta Model - Product Coverages

Museums Property Policy Coverages

"Parts"

"Assembly"

Museum
Property
Policy
Contract

Offered to Museums
and Cultural Institutions
in New York and California

Building
Debris Removal
Newly Acquired Collections
Trees, Lawns, Shrubs and Topiary
Broadcast Towers and Antennas
Underground Storage Tanks

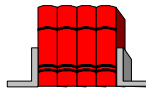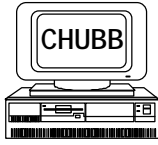Museum Building
Debris Removal
Newly Acquired Collections
Trees, Lawns, Shrubs and Topiary

Meta Model - Policy Agreement Coverage

The Frick Museum Property Policy Coverages

"Assembly"

Museum Building
Debris Removal
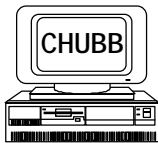Newly Acquired Collections
Trees, Lawns, Shrubs and Topiary

Museum
Property
Policy
Contract

"Distribution"

Museum Building
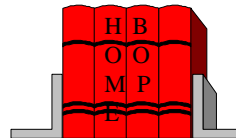Newly Acquired Collections

"Frick Museum
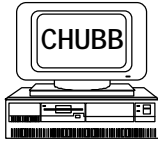   Property Policy"

Meta Model - Financial Obligation

Property Policy Limits

"Parts"

Building All-Risk Limit
Additional Living Expenses Limit
Building Earthquake Limit
Debris Removal Limit
Newly Acquired Collections Limit
Trees, Lawns, Shrubs and Topiary Limit
Broadcast Towers Limit
Underground Storage Tanks Clean-up Limit

H B
O O
M P
L

Meta Model - Product Financial Obligation

Museums Property Policy Limits

"Parts"

"Assembly"

Museum Property Policy Contract

"Parts"

Building All-Risk Limit
Additional Living Expenses Limit
Building Earthquake Limit
Debris Removal Limit
Newly Acquired Collections Limit
Trees, Lawns, Shrubs and Topiary Limit
Broadcast Towers Limit
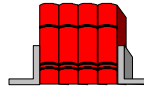Underground Storage Tanks Clean-up Limit

"Assembly"

Museum All-Risk Limit
    available in NY and CA

Museum Earthquake Limit
    available in NY
    available in CA up to $5,000,000

Newly Acquired Collections Limit
    available in NY and CA up to $5,000,000

Trees, Lawns, Shrubs and Topiary Limit
    available in NY, CA up to $25,000

Meta Model - Financial Agreement

The Frick Museum Property Policy Limits

"Assembly"

Museum Property Policy Contract

"Distribution"

"Assembly"

Museum All-Risk Limit
    available in NY and CA

Museum Earthquake Limit
    available in NY
    available in CA up to $5,000,000

Newly Acquired Collections Limit
    available in NY and CA up to $5,000,000

Trees, Lawns, Shrubs and Topiary Limit
    available in NY, CA up to $25,000

"Distribution"

Museum All-Risk Limit $10,000,000

Museum Earthquake Limit $10,000,000
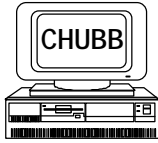
Newly Acquired Collections Limit $1,000,000

"Frick Museum Property Policy"

Benefits, Issues and Challenges

CHUBB

- ■ Benefits

- ■ Business Issues

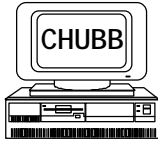- ■ Technical Issues

- ■ Organizational Challenges

Benefits - Rapid Change

CHUBB

Capturing a New Piece of Information

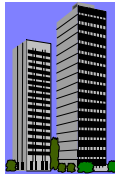| TYPE OF CHANGE	DATA CAPTURE AND BUSINESS RULES	NEW D/B FIELD	OTHER IMPACT	TOTAL IMPACT
APEX	20 minutes	0	-Customer Test 10 Minutes	30 Minutes
LEGACY	1-2 weeks	4-6 weeks	-Customer test 1-2 weeks -DBA Scheduling	6 - 10 Weeks

CHUBB | Benefits - Sharing Information

Updates to information can be shared by interested parties

Burglar Alarm
      Local - as of 2/10/1996
      Central - as of 3/10/1996 - current

"I did a loss control survey
 and recommended a
 Central burglar alarm.
 They installedit on 3/10/1996"

"There was only a Local
 burglar alarm when
 I wrote the policy in
 February 1996 but now my
 policy system advises me that
 that information is no longer current"

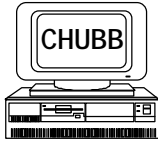## CHUBB | Business Issues

■ Educating the Underwriting Departments

– New structure

– New abilities

– New control

■ Getting Underwriting Resources for Product Definition

– Business Role

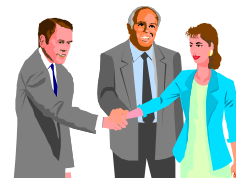– I/T Role

Technical Issues

- Sharing Information
  - Ability to update information from many sources
  - Retain private view of information in each system
- Performance
  - Access of Definition to interpret data
- Data Repository Tools
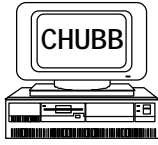 - Inability to use DBMS Catalogue for business data

Organizational Challenges

- Ownership of "Parts"
  - Responsibility for definition - a role the Customer may not want
  - Ensure reusability
- Change in Roles and Responsibilities
  - Recognizing Potential
  - Allocating Resources
- Develop Partnership for Joint Development

Discussion

■ Questions and Answers ？ ？

Track 7   Session 770
Metal Model Approach to
Data Base Design