Systems Consolidation:
A Claims System Consolidation Scenario

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Background & Challenge

- Health care insurance provider grew via acquisitions resulting in:
  - Duplication in core applications and data
- Redundant functions, systems and data:
  - Increased business operating costs
  - Decreased ability to service customers
  - Reduced ability to bring new products to market
- The Challenge:
  - Effectively streamline business by consolidating common functions, customers and data
Multiple Redundant Data Structures & Systems Across Information Architecture

Represented mix of individual and group medical policies and customers
Redundancy Challenges

- Redundant data and functions scattered across infrastructure – For example:
  - Same customer data in different data structures
  - Claim calculations differ across claims systems
  - Requires cross-functional reconciliation

- Data and systems are not aligned around market requirements
  - Requires realigning as well as consolidating data and applications

- No one-to-one functional correspondence
  - Requires careful functional realignment
Consolidation Roadmap

- Define target data and functional architecture
- Functionally decompose redundant systems
- Develop phased consolidation plan
- Rationalize data definitions across systems of interest
- Refactor baseline systems in preparation for consolidation
- Using phased approach, consolidate and phase out redundant systems
Defining End-State Data & Functional Architecture

Data architecture designed around market & business-driven requirements

Common Data Architecture

Applications decompose into single function modules (i.e. components)
Program-to-function mapping helps determine level of legacy application conformance to target architecture.
Functional decomposition maps existing programs to functions and processes (sub-functions) that those programs implement.

Results of this analysis, which can be mapped to a target functions for the purpose of reuse analysis, provides a roadmap to more fine grain analysis, consolidation and the realignment of existing architecture.

### Mapping functions to program source modules

<table>
<thead>
<tr>
<th>PROGRAM SOURCE</th>
<th>CURRENT PROCESS</th>
<th>CURRENT FUNCTION</th>
<th>TARGET FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>IC300200</td>
<td>Edit Ind. Claim</td>
<td>Individual Claims</td>
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<tr>
<td>IC300201</td>
<td>Setup Ind. Claim</td>
<td>Individual Claims</td>
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<tr>
<td>IC300202</td>
<td>Approve Ind. Claim</td>
<td>Individual Claims</td>
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<tr>
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<td>Reject Ind. Claim</td>
<td>Individual Claims</td>
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<tr>
<td>IC500000</td>
<td>Pay Ind. Claim</td>
<td>Individual Claims</td>
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<tr>
<td>PM774200</td>
<td>Increase Rate</td>
<td>Prod. Mgmt.</td>
<td></td>
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<tr>
<td>PM600350</td>
<td>Calculate Rate</td>
<td>Prod. Mgmt.</td>
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<tr>
<td>PA08040</td>
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<td>Policy Admin.</td>
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<tr>
<td>PA0922</td>
<td>Add Policy</td>
<td>Policy Admin.</td>
<td></td>
</tr>
<tr>
<td>PA08041</td>
<td>Delete Policy</td>
<td>Policy Admin.</td>
<td></td>
</tr>
<tr>
<td>PM400100</td>
<td>Ship corporate products</td>
<td>Prod. Mgmt.</td>
<td></td>
</tr>
<tr>
<td>PM400200</td>
<td>Ship corporate products</td>
<td>Prod. Mgmt.</td>
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</tr>
<tr>
<td>GM906600</td>
<td>Edit Group Claim</td>
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<td></td>
</tr>
<tr>
<td>GM906601</td>
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<tr>
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<tr>
<td>MA240030</td>
<td>Reject Group Claim</td>
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<tr>
<td>AM240050</td>
<td>Establish Agent</td>
<td>Agency Mgmt.</td>
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</tr>
<tr>
<td>AM300100</td>
<td>Adjust Compensation</td>
<td>Agency Mgmt.</td>
<td></td>
</tr>
<tr>
<td>PP805000</td>
<td>Process Proposal</td>
<td>Proposal Processing</td>
<td></td>
</tr>
<tr>
<td>Etc...</td>
<td>Etc...</td>
<td>Etc...</td>
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</tr>
</tbody>
</table>

Program / Process / Function Map Example
Consolidation Approach

“Insurance Provider Architecture Consolidation Example”

**REFACTORING STEPS**

Step 1  Code structuring & program cleanup

Step 2  Data definition rationalization

Step 3  Baseline system modularization

Step 4  Create consolidated data architecture

**TRANSFORMATION STEPS**

Step 5  Migrate common Claims functions to baseline

Step 6  Migrate common Product Mgmt. functions to baseline

Step 7  Migrate common Policy Admin. functions to baseline

Step 8  Migrate common Agency functions to baseline

Step 9  Migrate common Proposal functions to baseline
Restructuring creates single entry/single exit procedures in a program, isolates I/O logic and generally prepares a system for modularization.
Data Record/Segment/Table Rationalization Approach

1. **Existing Source**
2. **Data Definition Analysis**
3. **Build Composite**
4. **Apply Descriptive Names**
5. **Composite Record**
6. **Propagate Composite**
7. **Secondary Trace & Propagation**
8. **New Source**
Data Definition Extraction

- Captures system-wide record, segment & table definitions
- Automated analysis stores results in tool repository
- Results drive business rule queries

Record Layout Candidates

Top-down, target data model

Yearly Pay
Gross Pay
Net Pay

MAST-REC. (From Pgm PM22500.)

01 MAST-REC.
  05 MAST-HEADER.
    10 M-NAME PIC X(31).
    10 M-NO PIC 9(6).
    10 M-DOB PIC 9(6).
  05 M-DOH PIC 9(6).
  05 M-SS-NO PIC 9(9).
  05 M-DIV-NO PIC 9(3).
  05 M-DEPT-NO PIC 9(3).
  05 M-MODE PIC X.
  05 M-YRLY-PAY PIC 9(8).
  05 M-VAC-DAYS PIC 99.
  05 M-GROSS-PAY PIC 9(8).
  05 M-NET-PAY PIC 9(5).
  05 FILLER PIC 9(36).
  05 M-YTD-GROSS PIC 9(8).
  05 M-YTD-NET PIC 9(8).
  05 FILLER PIC X(13).
Functions can be split out and recombined to re-aggregate application functionality. Tools provide high degree of automation for this process.
System Name: UNIT#1-GROUP-CLAIMS:

Program Name: GM906600

Paragraph Name: VALID-INCOMING-CLAIM-AMOUNT

Data Element Search Argument:
   Element = CLAIM-AMOUNT

Business Logic:
   IF CLAIM-NUMBER = VALID-CLAIM (IND)
   AND CLAIM-AMOUNT NUMERIC
   PERFORM PROCESS-CLAIM.

Modernization tools facilitate automated business logic extraction for purposes of analysis and modernization of applications.
Phased Consolidation: One Application From Many

Existing Applications

<table>
<thead>
<tr>
<th>Business Unit 1</th>
<th>Business Unit 2</th>
<th>Business Unit 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Claims PM Prop. PA</td>
<td>Claims PM Prop. PA</td>
<td>Claims PM Prop. PA</td>
</tr>
</tbody>
</table>

Baseline Applications

<table>
<thead>
<tr>
<th>Claims</th>
<th>Agent</th>
<th>PA</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM Prop.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Modernization Tasks

- Integrate & automate common processes across business units
- Consolidate & redesign cross-functional data
- Migrate baseline systems to new architecture
- Migrate & consolidate subsequent business unit applications under new architecture
- Web-enable selected user interfaces as required

Target Architecture

Integrated Relational Databases

- Claims -Ind. -Group
- Policy Admin.
- Prod Mgmt.
- Agency
- Proposal

Proposal
Actual model was implemented for various clients in MS Access & in tool repositories. Allows tracking of modules & functions to support modularization.
In Summary…

- Consolidation of data and application architectures is not only possible, but may be necessary.
- A phased approach to modernization analysis, refactoring and transformation can be used to deliver a cost solution that manages change and risk.
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