How Business Process Model and Notation (BPMN) Supports Health Enterprise Architecture

Veterans Health Administration
Business Architecture

December 2016
Objectives

- Care in the Community Program Case Study
- Process Architecture Analysis
- Other Process Applications
Care in the Community Program Case Study
Care in the Community Program Overview

- Program addressing compliance with the Veterans Access, Choice, and Accountability Act (VACAA) of 2014
- Majority of law impacts the organization previously known as the Chief Business Office (CBO); now renamed to the Office of Community Care
- Scope of law permits Veterans and Active Duty Service Members to seek care outside of VA medical facilities under certain conditions (distance, time, excessive burden)
- Law provided funding for IT system acquisitions and enhancements
- VHA Business Architecture provides functional, process, and information evaluation of current environment which is delivered to VA’s Office of Information Technology
Process Development Overview

- Initial 1-week engagement where drafts created in MS Visio
  - Target state was identified as Interim To-Be (approximately 9 – 12 months)
- Engaged 30+ SMEs for process discussions
- Offline analysis where diagrams were re-drawn in IBM Rational Software Architect
- Follow-up sessions (4+ weeks) reviewing process updates
- Presented diagrams via wall-size print-outs
- Further process analysis, information and IT review (subsequent months)
  - Reversed some automation proposals
- Developed 19 processes
  - 1 Level 1: Summary
  - 11 Level 2: Owned by Community Care program
  - 8 Level 3: Controlled by projects within the Community Care program
  - 5 Collaboration Views:  1 for each swimlane in the Summary process
Case Study: Determine Valid Claims
Case Study EA Application: Roles

- Roles should reflect primary functions performed in activities
- Job titles are not ideal functional roles in most cases
  - Budget Technician could be comprised of
    - Claims Auditor
    - Claims Processor
- Roles identified for Community Care processes (8)
  - Claims Processor
  - Claims Auditor
  - Clinical Care Coordinator
  - Contracting Officer Representative
  - Enrollment Staff
  - Geocoder
  - Referral Processor
  - Scheduler
Case Study EA Application: Activities

- 3 BPMN Task Types used for Community Care program
  - User: system-assisted
  - Service: system-automated
  - Blank: manual
  - Business Rule: did not use
- Activities are discrete, functional actions
  - Converted end-user supplied terminology to functional terminology
  - Balanced level of detail among activities
    - Promoted/demoted activities
- Review if activities are transformative
  - Do they have both inputs and outputs?
Case Study EA Application: Business Rules

- Flagged by keyword identifiers - either
  - “Determine”
  - “Compare”
- Graphical indicator
  - Numerous data objects
- Documented key business rules within the activity definition and business requirements
- Detailed business rule identification backlogged for development
Case Study EA Application: Data Objects

- Compared data objects across the 18 Level 2 and 3 processes
  - Identified 85 *unique* data objects out of 392 total data objects
- For disambiguation, certain data object terms were provided modifiers
  - Consults: Internal, Community Care
  - Referrals: Community Care, Outbound, Request
- Documented system of record
  - System supporting each activity
  - System managing each data object
- Data objects can be traced to a Logical Information Model
Case Study EA Application: Events

- Ensured event names were consistent within and across processes
  - If the start event impacts an information concept, then the end event also impacts it
  - The end event for a preceding process is the start event for the subsequent process
Other Process Applications
Process Application: External Business Collaboration
### Process Application: Business Requirements

Business requirements are derived from the process and information models.

The Requirements Traceability Matrix tracks the process and information from which the requirement was derived.

Requirements provide a textual complement to processes.

<table>
<thead>
<tr>
<th>New Service Request</th>
<th>Business Requirement Doc</th>
<th>Portfolio</th>
<th>Business ID or Epic ID (Unique Identifier)</th>
<th>User Narrative (High level business requirement) <em>(BRD) (Optional)</em></th>
<th>Mapping to Process Model(s)</th>
<th>Mapping to Process Model Element(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015002 (724570)</td>
<td>BRD</td>
<td>Claims</td>
<td>767728</td>
<td>As Chief Business Office Purchased Care, I want an automated system that is able to receive Electronic Data Interchange (EDI) claim transactions, to validate the claims and forward them to the appropriate payers via a clearinghouse so that we can ensure receipt of verified claims. (Note: Types of services include Outpatient, Inpatient, Urgent Care, Emergency, Pharmacy, Durable Medical Equipment, others to be determined)</td>
<td>Determine Valid Claims</td>
<td>Import Claim (CCS/PA/D1)</td>
</tr>
<tr>
<td>2015002 (724570)</td>
<td>BRD</td>
<td>Claims</td>
<td>767728</td>
<td>As Chief Business Office Purchased Care, I want an automated system that is able to process claims for reimbursement for multiple types of services so that appropriate editing rules will be applied when validating the claim. (Note: Types of services include Outpatient, Inpatient, Urgent Care, Emergency, Pharmacy, Durable Medical Equipment, others to be determined)</td>
<td>Determine Valid Claims</td>
<td>Import Claim (CCS/PA/D1)</td>
</tr>
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<td>2015002 (724570)</td>
<td>BRD</td>
<td>Claims</td>
<td>767727</td>
<td>As Chief Business Office Purchased Care, I want an automated system that is able to access medical documentation to a claim, so that the documentation can be linked to the claim and for coordination of services.</td>
<td>Determine Valid Claims</td>
<td>Import Claim (CCS/PA/D1)</td>
</tr>
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<td>2015002 (724570)</td>
<td>BRD</td>
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<td>As Chief Business Office Purchased Care, I want an automated system that is able to access medical documentation to a claim, so that the documentation can be linked to the authentication and coordination of services.</td>
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</tr>
<tr>
<td>2015002 (724570)</td>
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<td>Claims</td>
<td>767728</td>
<td>As Chief Business Office Purchased Care, I want to be able to automate indexing (add information required by VHA Health Information Management) of medical documentation received, so that the documentation can be linked to the patient’s medical record within VAERS.</td>
<td>Determine Valid Claims</td>
<td>Import Claim (CCS/PA/D1)</td>
</tr>
</tbody>
</table>
Questions?