NCRTKM

An Ontology and its realization as a DSL on mobile devices - a Healthcare case study

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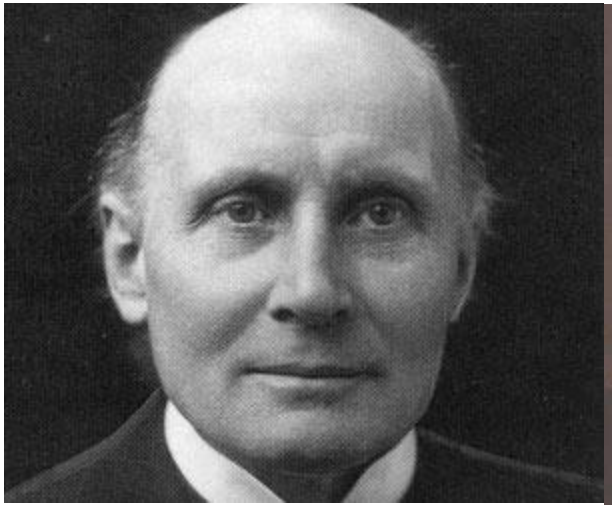
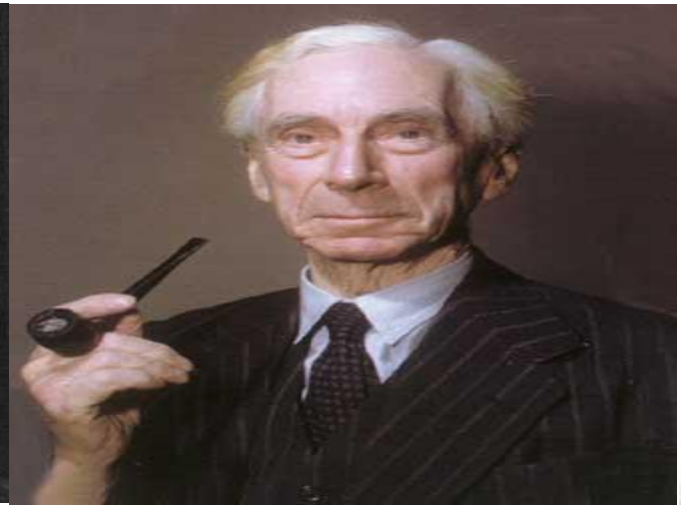
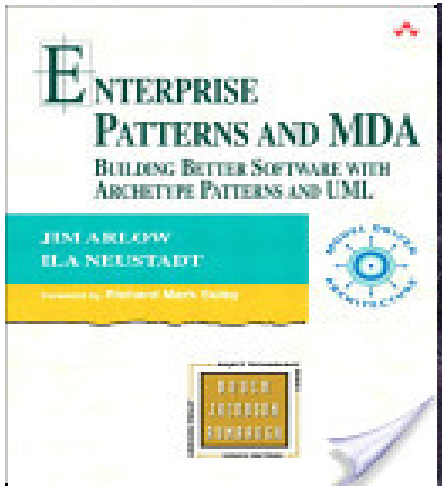
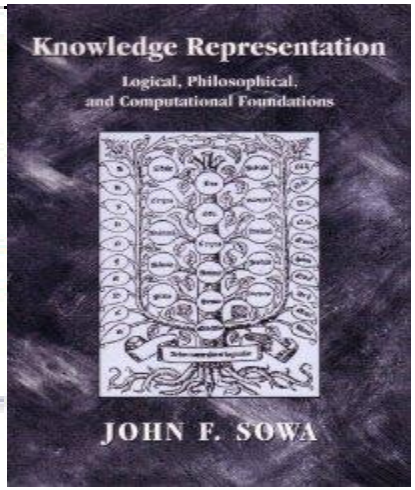
Source of All Information!









Overview

- Medical aid distribution in the US
- The processing bottle-neck
- an Android/iOS tablet off-line application as a “solution”
- Engineering the solution became a problem of sort !

Engineering Challenges

- Too many Federal and State Programs with its own “Lingo”
- A complicated Integration scheme with existing systems
- Multiplatform application
- Lack of a public domain/cots mobile based rule engine

Solving the "Lingo" problem

- a team of people carefully went through 250-odd PDF/JPG documents
- Convinced the Customer to have a “definitive” Ontology
- Arlow/Neustadt Archetype pattern !
- Built an Ontology in bottom up manner
- Created Questionnaires based on the Ontology for Eligibility determination/Forms processing.
- Created Information structures to map the ontology to “private languages” of respective federal and state programs
- Decided on a Canonical publishing format (Adobe PDF) and conceived a pipeline for generation of PDF documents.

Solving System Integration

- An Even Driven Integration scheme
- Integration at things (entity) level vs process level
- Entity level integration – Entities , Segments and Fields
- Dynamic Type synthesis for a generic adaptor framework for down stream systems
- Business Context Documents
- Implement it ! (Appendix 1)

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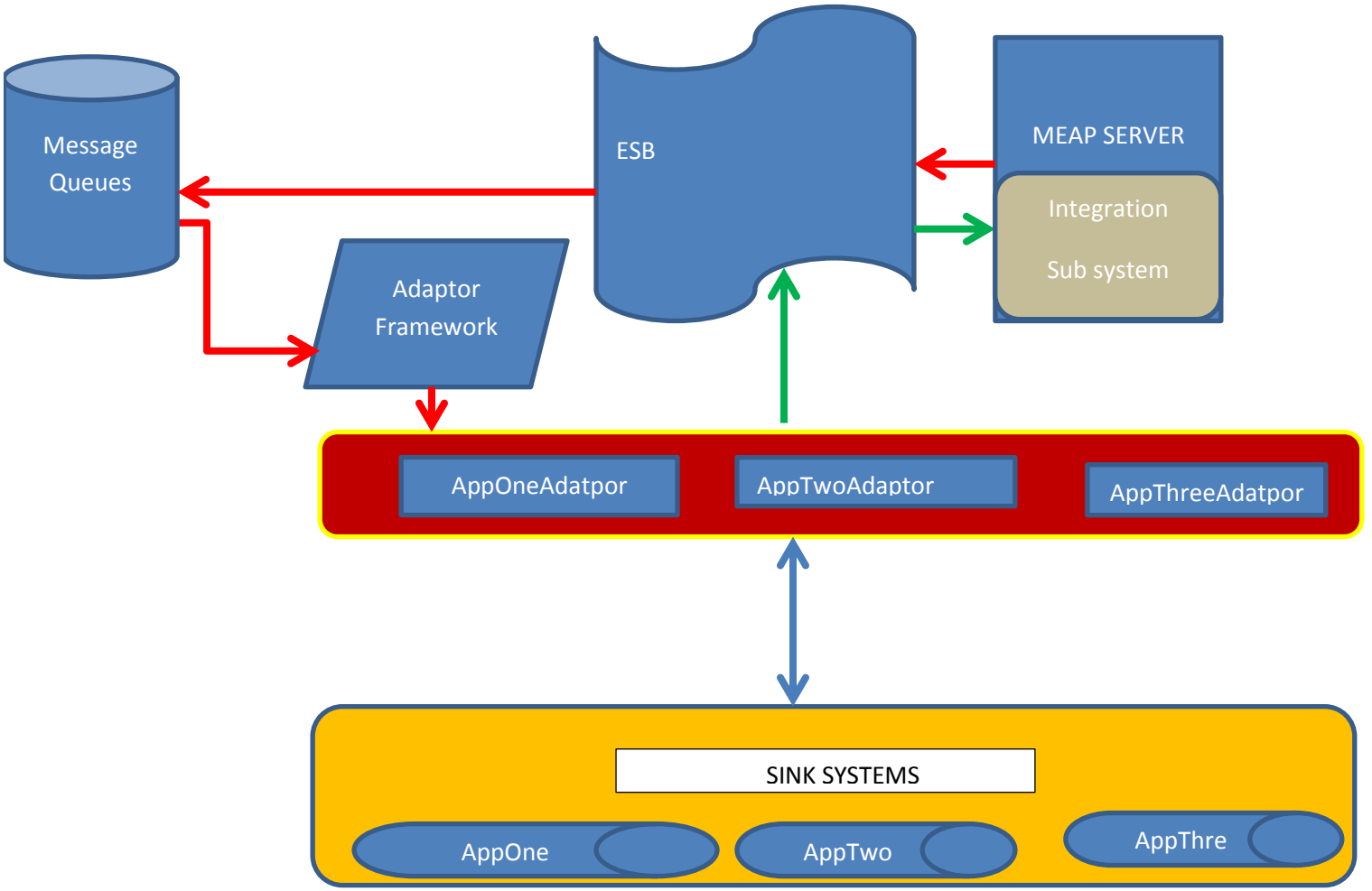
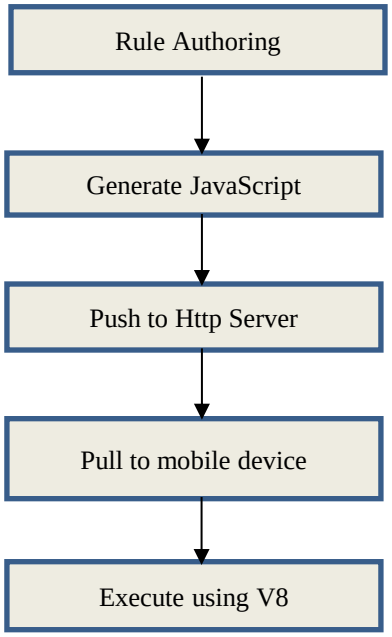
Eligibility determination

- Necessity of a Domain Specific Language
- A standard ontology helped DSL engineering
- SLANGFORDOTNET (http://slandfordotnet.codeplex.com)
- Wrote a JavaScript Backend for SLANG
- Rule snippets in EXCEL (“appeasing” the CIO !)
- EXCEL-TO-SLANG-TO-JS ! (Appendix 2)
- Node.js and Google V8 Engine and the Kony platform

Appendix 1


Message Queues
ESB
MEAP SERVER
Integration Sub system
Adaptor Framework
AppOneAdatpor
AppTwoAdaptor
AppThreeAdatpor
SINK SYSTEMS
AppOne
AppTwo
AppThre

Appendix 2


Rule Authoring
Generate JavaScript
Push to Http Server
Pull to mobile device
Execute using V8

Thank You

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