Sallie Mae
The Business Case for Ontology

Integration of Multiple Systems from Multiple Companies

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Ontology Summit 2011: Making the Case for Ontology

Integration of Multiple Systems from Multiple Companies

CHALLENGE

• Multiple systems and sources of knowledge in different parts of the enterprise, owned by different communities of practice.

•Gaining time and commitment from subject matter experts to ensure completeness of the model.

• Different groups see different shades of meaning and application for similar terms, in different contexts.

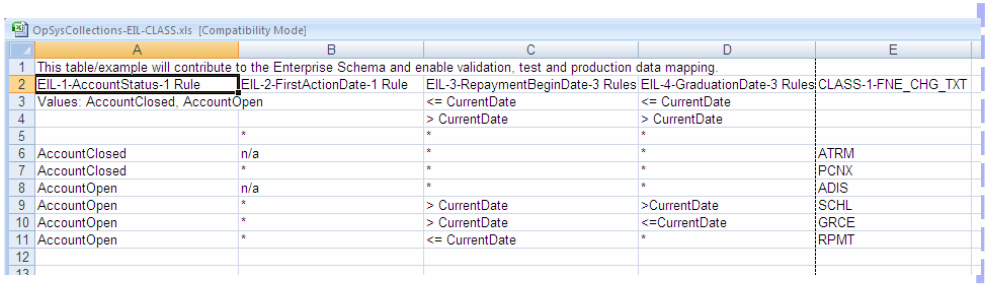
• Needs a unifying approach supporting local views

SOLUTION

• Facilitation of knowledge gathering using ontology engineering methods.

• Formal ontology notation for single ontology, while presenting views and facets of this to subject matter experts.

• Curation of the ontology



OpSysCollections-EIL-CLASS.xls [Compatibility Mode]

	A	B	C	D	E
1	This table/example will contribute to the Enterprise Schema and enable validation, test and production data mapping.				
2	EIL-1-AccountStatus-1 Rule	EIL-2-FirstActionDate-1 Rule	EIL-3-RepaymentBeginDate-3 Rules	EIL-4-GraduationDate-3 Rules	CLASS-1-FNE_CHG_TXT
3	Values: AccountClosed, AccountOpen		<= CurrentDate	<= CurrentDate	
4			> CurrentDate	> CurrentDate	
5		*	*	*	
6	AccountClosed	n/a	*	*	ATRM
7	AccountClosed	*	*	*	PCNX
8	AccountOpen	n/a	*	*	ADIS
9	AccountOpen	*	> CurrentDate	>CurrentDate	SCHL
10	AccountOpen	*	> CurrentDate	<=CurrentDate	GRCE
11	AccountOpen	*	<= CurrentDate	*	RPMT
12					

BENEFITS

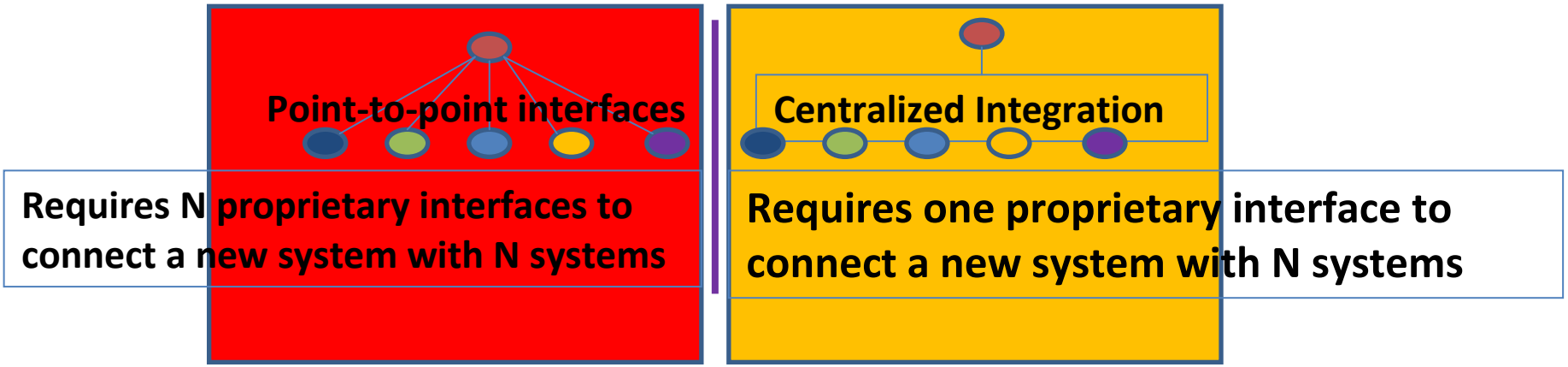
• Best use of subject matter experts' time and resources

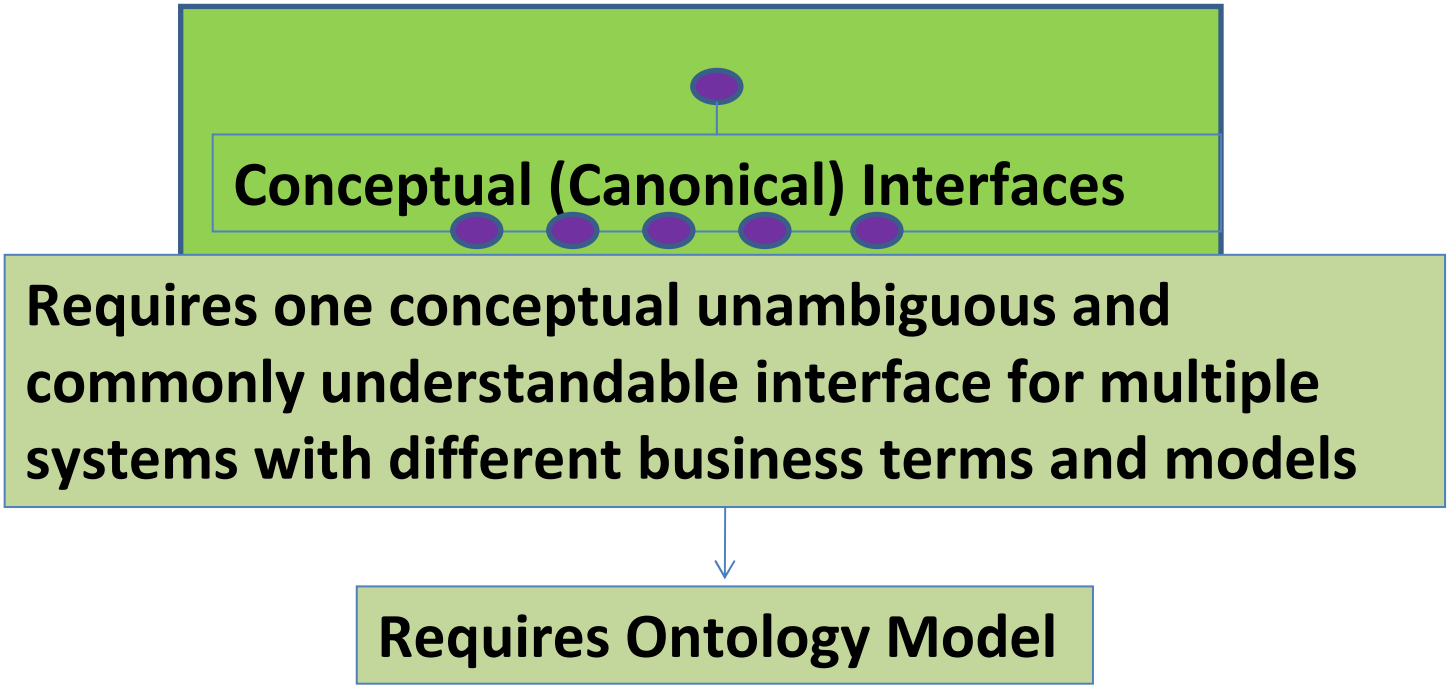
• Curatorship of Enterprise Semantic Architect ensures quality, consistency and completeness of the ontology

• Collaboration in industry standardization efforts (e.g. EDM Council), via common semantics

• Ensures that the knowledge captured at Sallie Mae is taken forward to industry-wide standardization efforts which we can then use

System Integration Evolution





Provide your feedback to Yefim.Zhuk@SallieMae.com

SLM Tree of Knowledge

From a Single View to Multiple Ontology Branches

The Tree of Knowledge has multiple branches related to different knowledge domains.

A formal representation of each domain with a controlled vocabulary and captured relationships between the concepts is a domain ontology.

Roles and rules:

Ontology can be captured best by a business architect or business analyst (BA).

An enterprise semantic architect (ESA) role is to facilitate multiple inputs to ontologies and focus on the connections.

It is OK for any specific ontology to provide a partial view.

Working with EDMC on financial ontology and internally on SLM Ontology – check for connections

Engaging SME in Ontology

- Subject matter experts are the most wanted in the process
- SMEs are too busy for new tools and extra efforts…
- Unless they gain immediate advantage on-the-go

Knowledge Acquisition and SME Efficiency

- More formal approach to documentation
- Conversational Interfaces to hint SME in the process
- Tools to convert more formal documents to Ontology

Example: Replacing Non-Formal Logic with the Rules
(This logic was placed in the Comments section for future development)

```
If XXX-NEW-STATUS2 = ‘C’ (account closed)
   If CHD-FIRST-ACT-DATE is empty (never any disbursements)
        Map to ‘ATRM’
  Else
       Map to ‘PCNX’
  End-if
Else
    If CHD-FIRST-ACT-DATE is empty (never any disbursements)
       Map to 'ADIS'
   Else
     If today’s date < CLSN-CSTS-BLLD-DT (P&I Repayment Begin Date)
       If today’s date < CHD-DRAW-PERD-END-DT (Grad / Sep Date)
          Map to ‘SCHL’
       Else
          Map to ‘GRCE’
      End-If
    Else
      Map to ‘RPMT’
   End-If
  End-If
 End-If
End-If
```

Decision Table and Input for Ontology

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