How We Learned to Stop Worrying and Embrace the Chaos
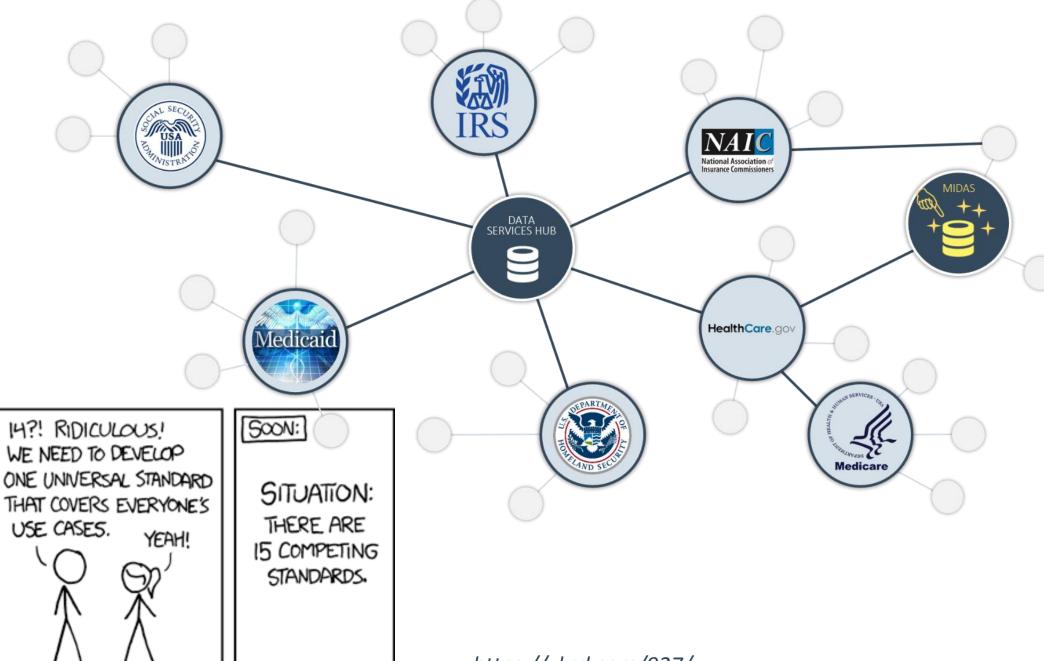
Peter Mork (Noblis)
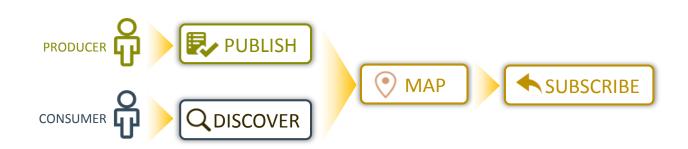
Adriane Chapman (University of Southampton)

Arnie Rosenthal (MITRE)
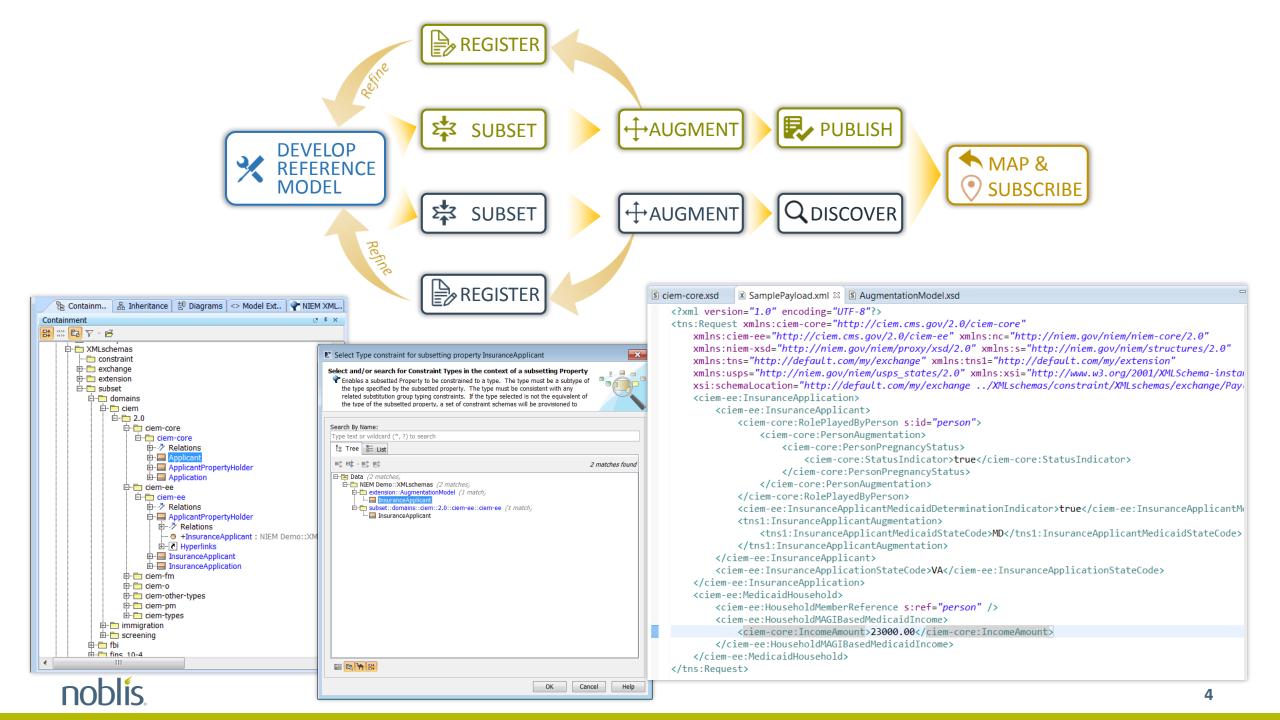
noblis®
For the best of reasons

https://xkcd.com/927/

TASK-BASED USERS

CONSORTIUM USERS

USER SERVICES

Define Requirements

Publish Augmentations

Map Model(s)

Discover Model(s)

MODEL SERVICES

Publish Reference Model

SAC Support

Promote Abstraction

Govern / Manage Costs

TERMINOLOGY + DEFINITIONS

SEMANTIC CORRESPONDENCES

Terminology and Definitions

Data Models

Requirements Documents

Vocabularies

Semantic Correspondences

Mappings

Requirements Matrix

noblis

Private, established relationship needs expansion: A and B already share information using schema X
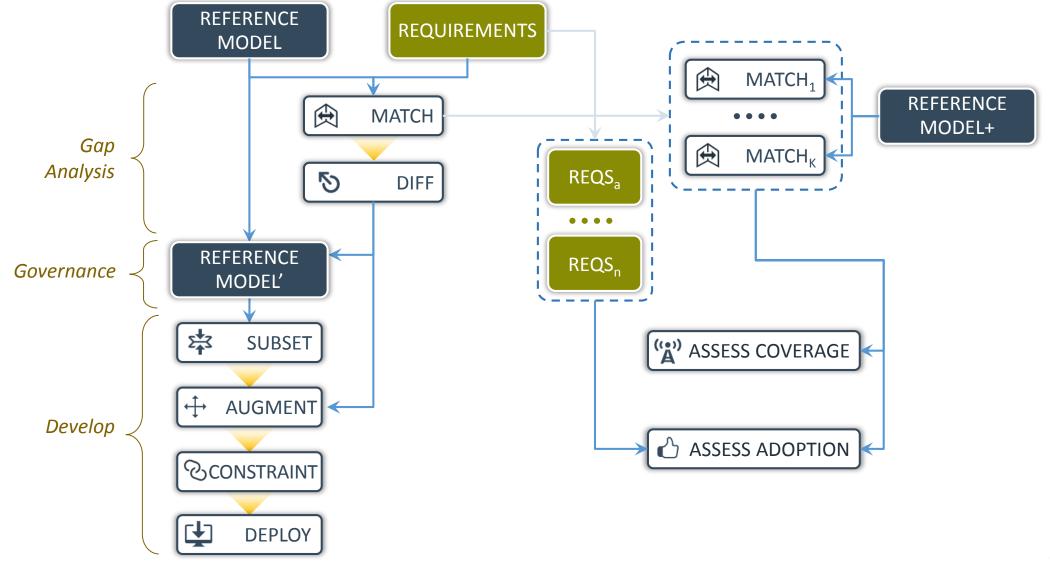
	B	C
1	**Element Name**	**Element Description**
2	SSN	Applicant Social Security Number
3	First Name	Applicant First Name
4	Middle Name	Applicant Middle Name
5	Last Name	Applicant Last Name
6	Date Of Birth	Date of Birth
7	Gender Code	Applicant Gender
8	Name Suffix	Name Suffix

A → B

X

Search → Augment & Subset → Publish

X'

A → B
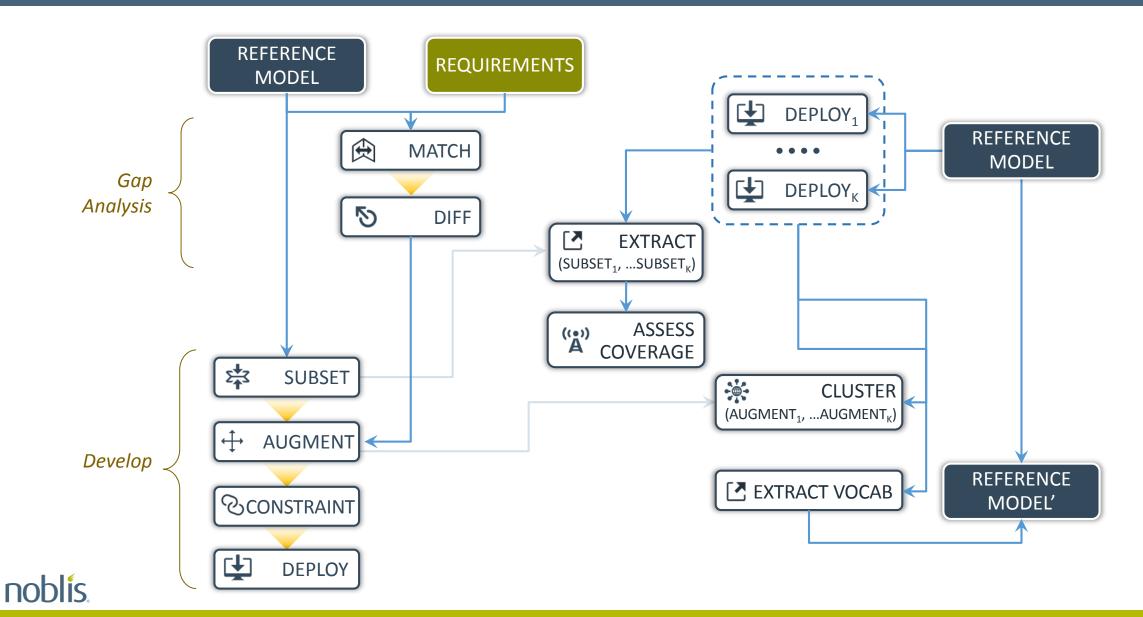
9	Effective From Date	Beginning date for which the Requestor checks eligibility (date when the application is submitted)
10	Effective To Date	End date for which the Requestor (FFE) checks eligibility (end of the eligibility year)

noblis
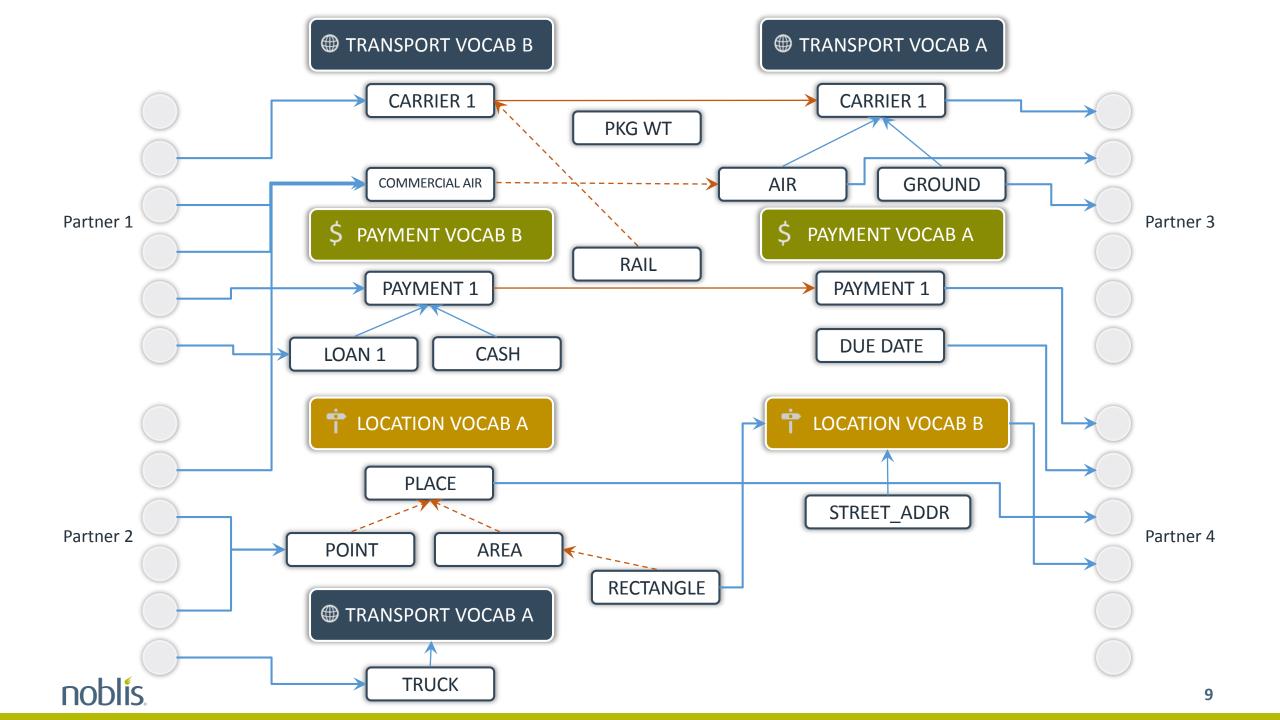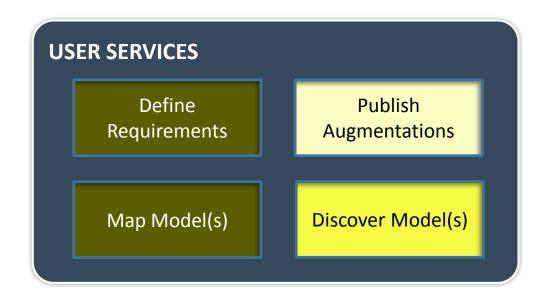
Enterprise needs a new exchange based on reference model, which is closely coupled to emerging requirements

Community members need a new exchange based on reference model, which is loosely coupled to emerging requirements

QUESTIONS?

References

1. Z. Bellahsene, A. Bonifat, and E. Rahm, *Schema Matching and Mapping*. Springer (2011)

2. P. Shvaiko and J. Euzenat, "Ontology Matching: State of the Art and Future Challenges." TKDE 25(1): 158–176 (2013)

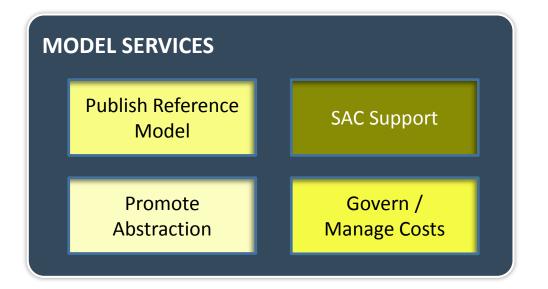3. P. Bernstein and S. Melnik, "Model Management 2.0: Manipulating Richer Mappings." SIGMOD (2007)

4. P. Mork, L. Seligman, A. Rosenthal, M. Morse, C. Wolf, J. Hoyt, and K. Smith. "Galaxy: Encouraging Data Sharing among Source with Schema Variants." ICDE (2009)

5. *National Information Exchange Model*. https://www.niem.gov

6. *HL7 Reference Information Model*. http://www.hl7.org/implement/standards/rim.cfm

7. A. Rosenthal and D. Reiner. "Tools and Transformations — for Practical Database Design." TODS 19(2): 167–211 (1994)

8. P. Mork, W. Melo, S. Dutcher, C. Curtis, and M. Scroggs, "Cost Estimation for Model-Driven Interoperability: A Canonical Data Modeling Approach." QSIC (2014)

9. K. Smith, P. Mork, L. Seligman, et al., "Unity: Speeding the Creation of Community Vocabularies for Information Integration and Reuse." IRI (2011)

noblis