Interoperability Use Cases

Presentation to the GTA
Spring Data Management Summit
Atlanta 2013

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Overview

Agency to Agency

- Legacy systems send, receive, and ingest automatically
- Senders and receivers are aware of each other

Agency to Broker to Agency

- Systems send messages to a broker
- Broker routes to one or more destinations
- Legacy systems ingest automatically

Users to Multiple Agencies

- Users perform federated query to look for information in multiple systems

Users to Portal to Agencies

- Users interact with a portal which mimics a legacy system to senders

Practical Issues

- Seamless Interoperability implies complex system to system interaction
- Legacy systems might need to be modified to handle seamless push of information and permit seamless ingests
- Oftentimes, the biggest hurdle in information sharing, besides the technical issues, is the lack of integration of the workflows
- Mismatched technical sophistication of users and systems
- Systems would rather we not let queries impact operations

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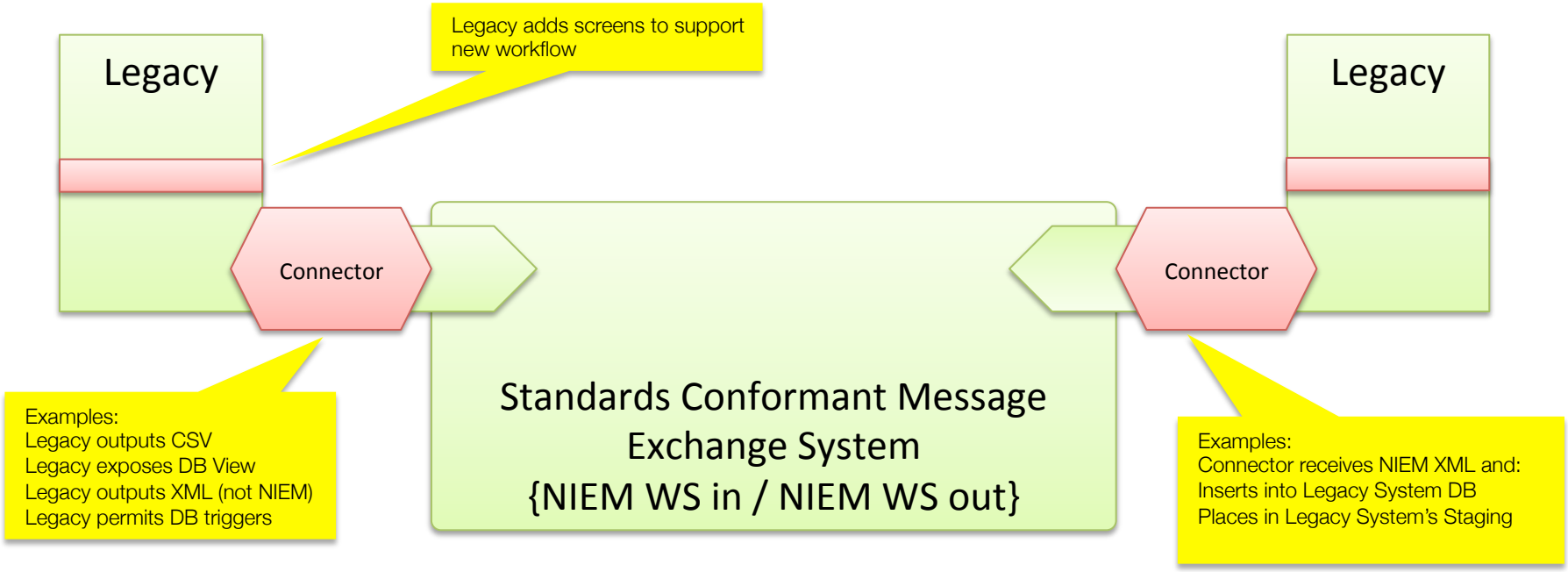
Approach 1: Take an Interim Step



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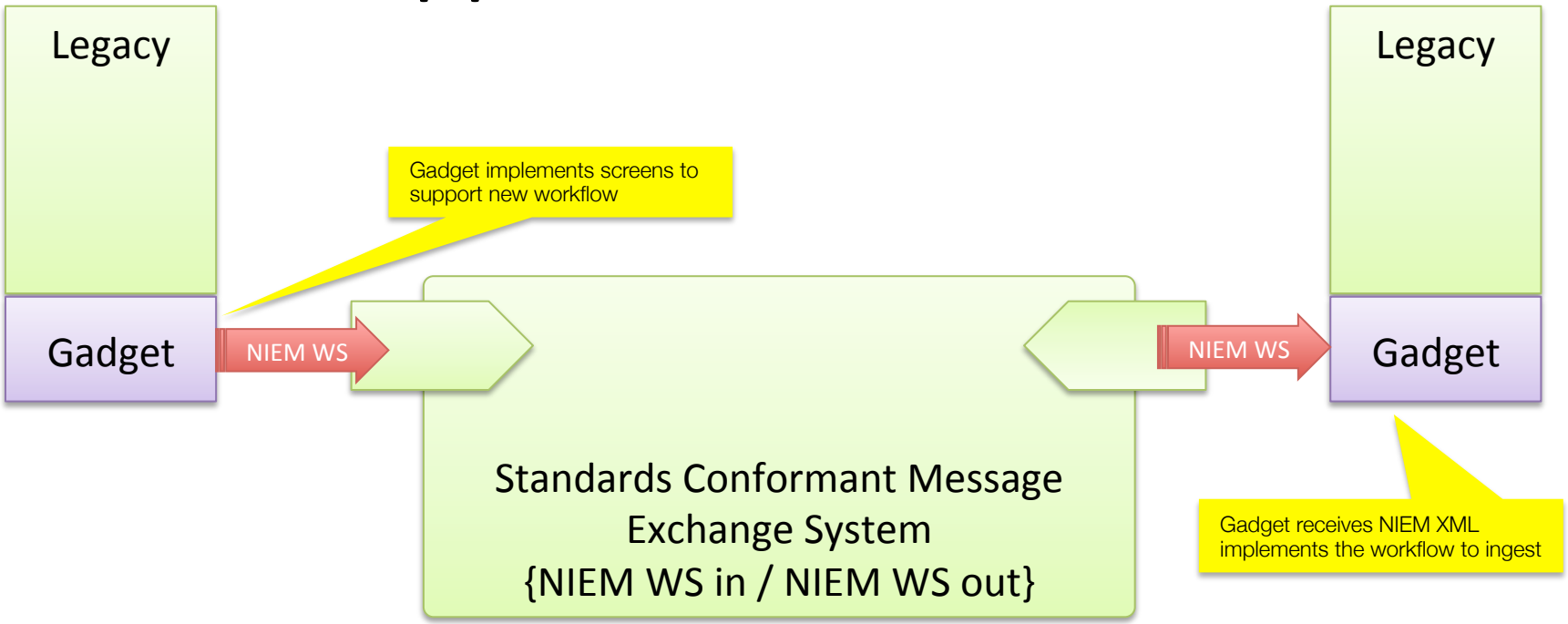
Approach 1: Alternate



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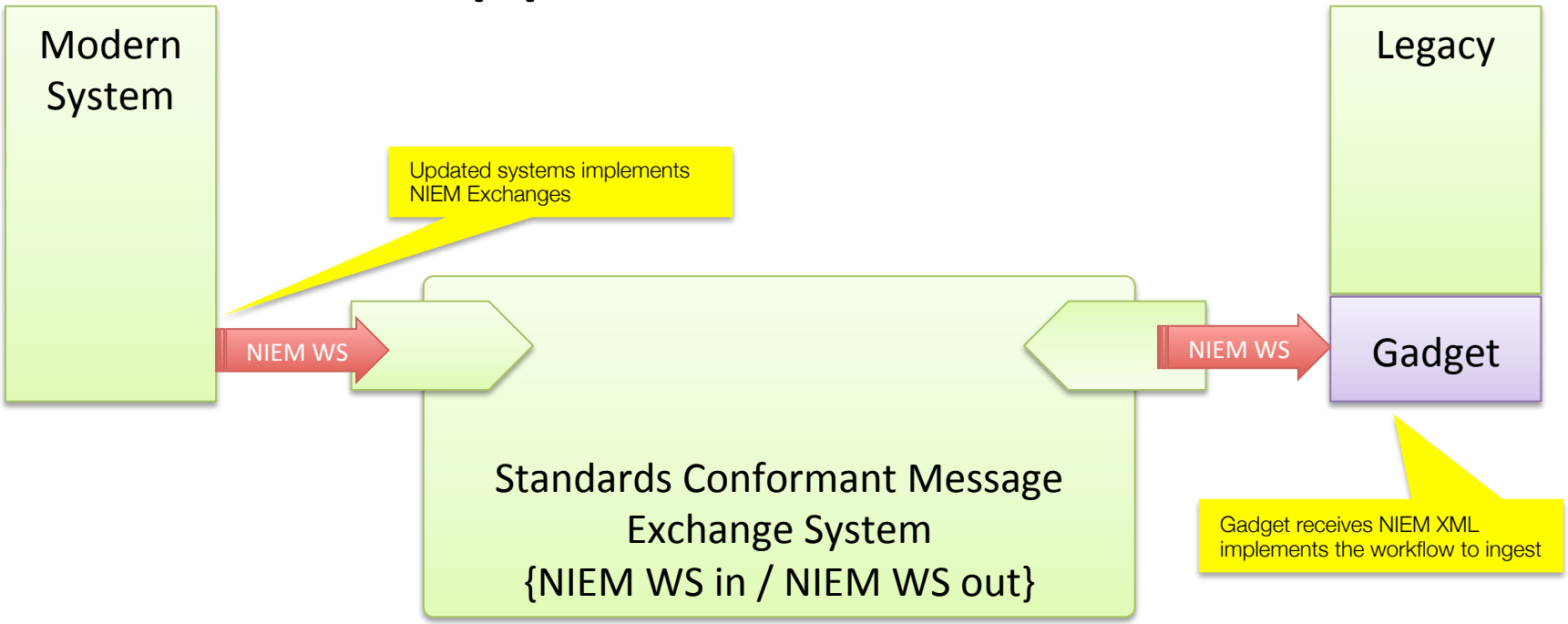
Approach 1: Future



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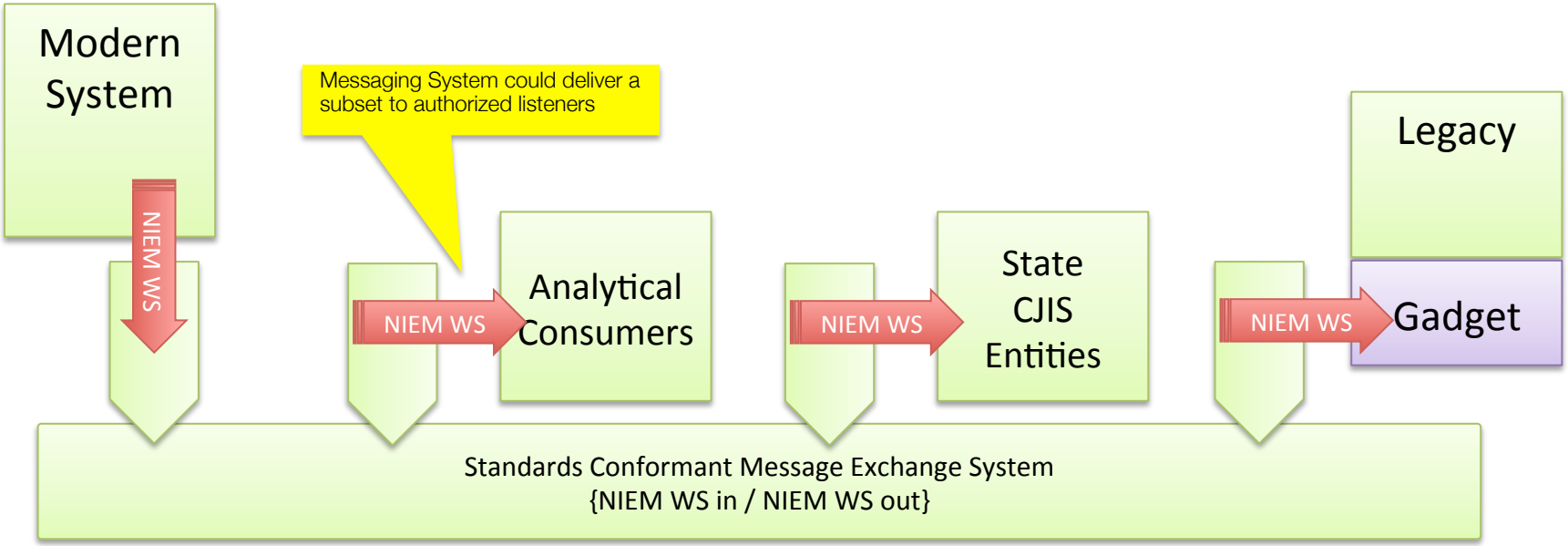
Extending the *network*



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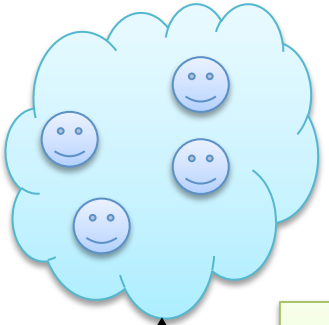
Finding information



Query Portal

NIEM WS

Data Source

ETL

Staging

NIEM WS

Data Source

NIEM WS

Standards Conformant Message Exchange System
{NIEM WS in / NIEM WS out}

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Issues of Trust

- How do we know who is receiving the data?
- What if we want to send different copies to different agencies?
- How do we control what we place on the front porch?
- How do we permit select user to see more information than others?

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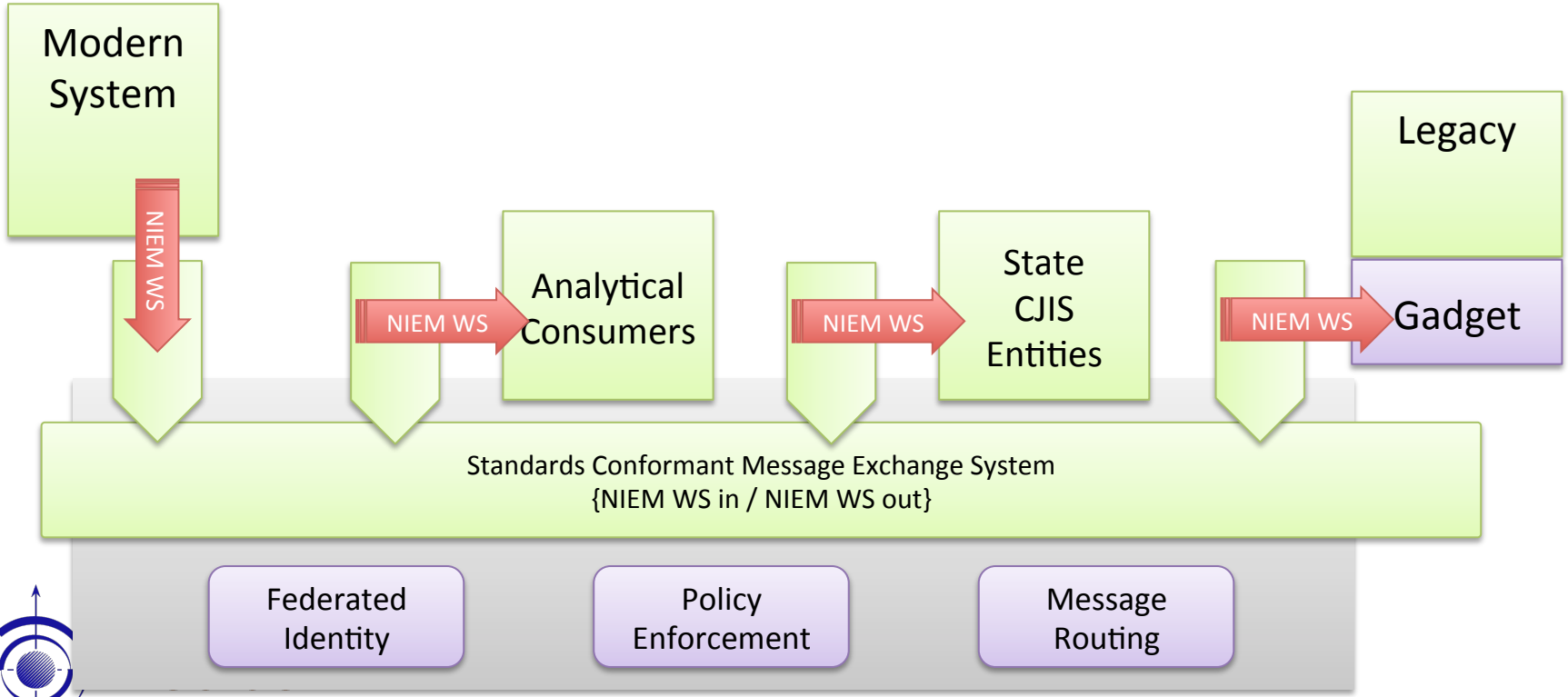
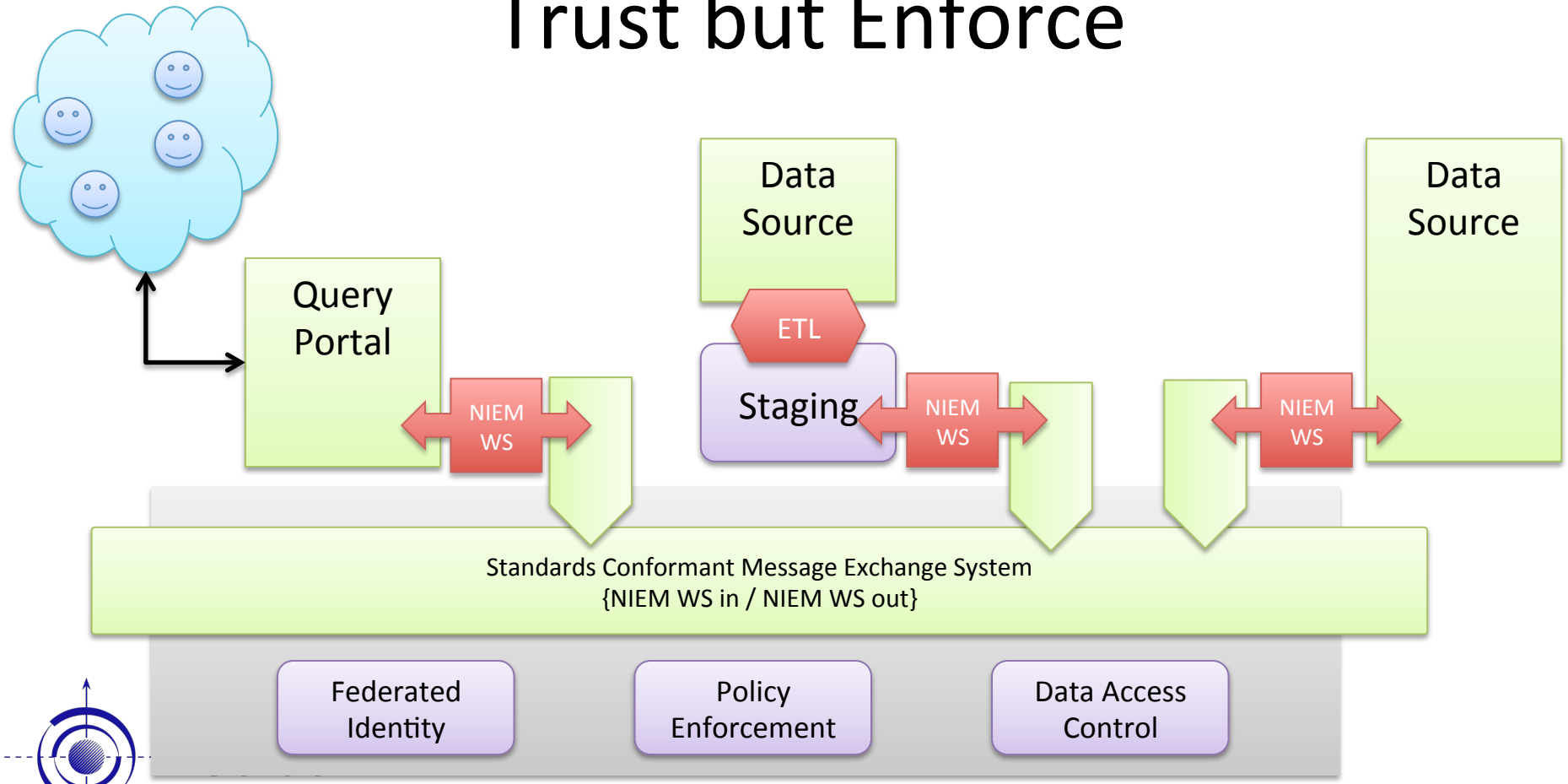
Trust but Enforce



Trust but Enforce



Thoughts on IEPDs

Dedicated IEPD

- Tailor-made for sending and receiving systems
- Might be hard to manage changes
- Could lead to silos
- Counterpoints:
  - Modeling tools now getting better, make it possible to manage change
  - Well annotated data models would also permit analytical consumers handle variety of data models

Reference IEPD

- Could serve a broad community
- Might be hard to get consensus on what the reference should be
- Makes it easy to build reporting and federated query applications

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Our experience

Dedicated IEPD

- Might be a better fit for large agencies
  - Modeling tools permit the creation of enterprise-level objects
  - Encourage enterprise-level reuse
- Better fit when systems need to ingest and work on data
  - Reference IEPDs might leave out important data elements
- Best if systems support NIEM / WS interactions directly

Reference IEPD

- Better approach when dealing with heterogeneous systems
- Let the connectors and staging deal with the variations of data at the sites
- Better fit for federated query / response system when searching for information in large number of disparate data sources is needed

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Thanks

- Questions?
  - Contact: chandra@tetruscorp.com

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