

Exorcising Costs and Time via Reuse

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September 30, 2015

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Presenter Background

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Jim Illback

Associate Tech Fellow



Current Assignment

- Technical Architect, Enterprise Master Data Management (E-MDM)

Education

- BA, Mathematics – Westmont College, Santa Barbara, CA
- MBA – Lake Forest School of Management, Lake Forest, IL

Certification

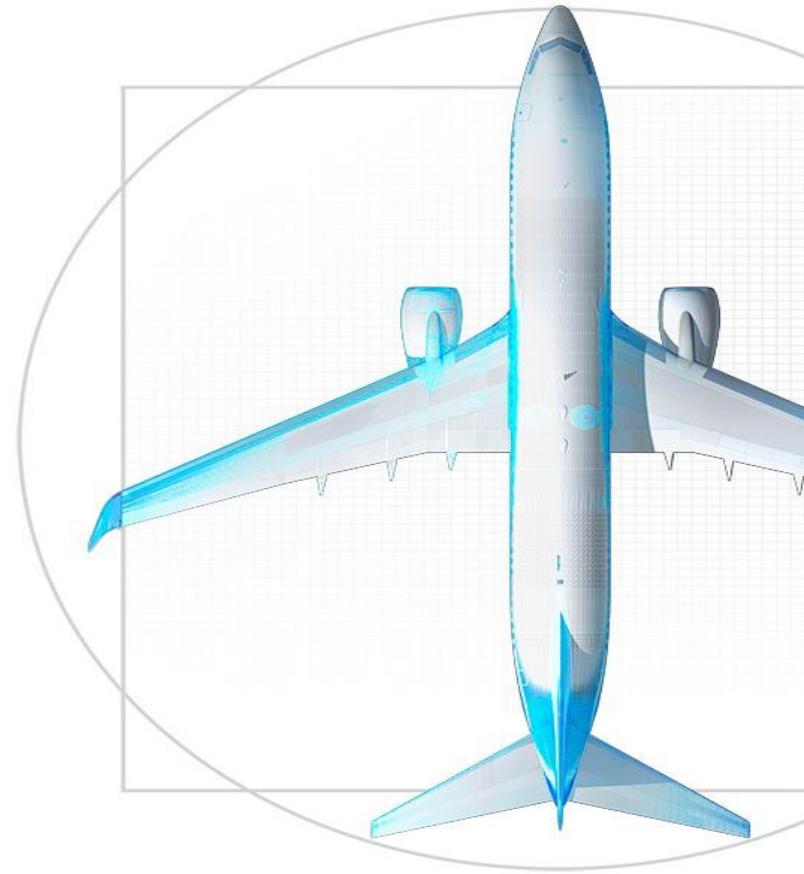
- MCSE – Microsoft
- SOA Certified Architect, Professional, Consultant – SOA Systems, Inc.

About Boeing

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What We Do Today

- **Design, assemble and support commercial jetliners**
 - Boeing 7-series family of airplanes leads the industry
 - Commercial Aviation Services offers broad range of services to passenger and freight carriers
- **Design, assemble and support defense systems**
 - World's largest designer and manufacturer of military transport, tankers, fighters and rotorcraft
 - Global Services & Support provides services to government customers worldwide
- **Design and assemble satellites and launch vehicles**
 - World's largest provider of commercial and military satellites; major service provider to NASA and prime contractor for the International Space Station
- **Integrate and support large-scale systems; develop networking technology and network-centric solutions**
- **Provide financing solutions focused on customer requirements**
- **Develop advanced systems and technology to meet future customer needs**



Connect and protect people globally

Agenda

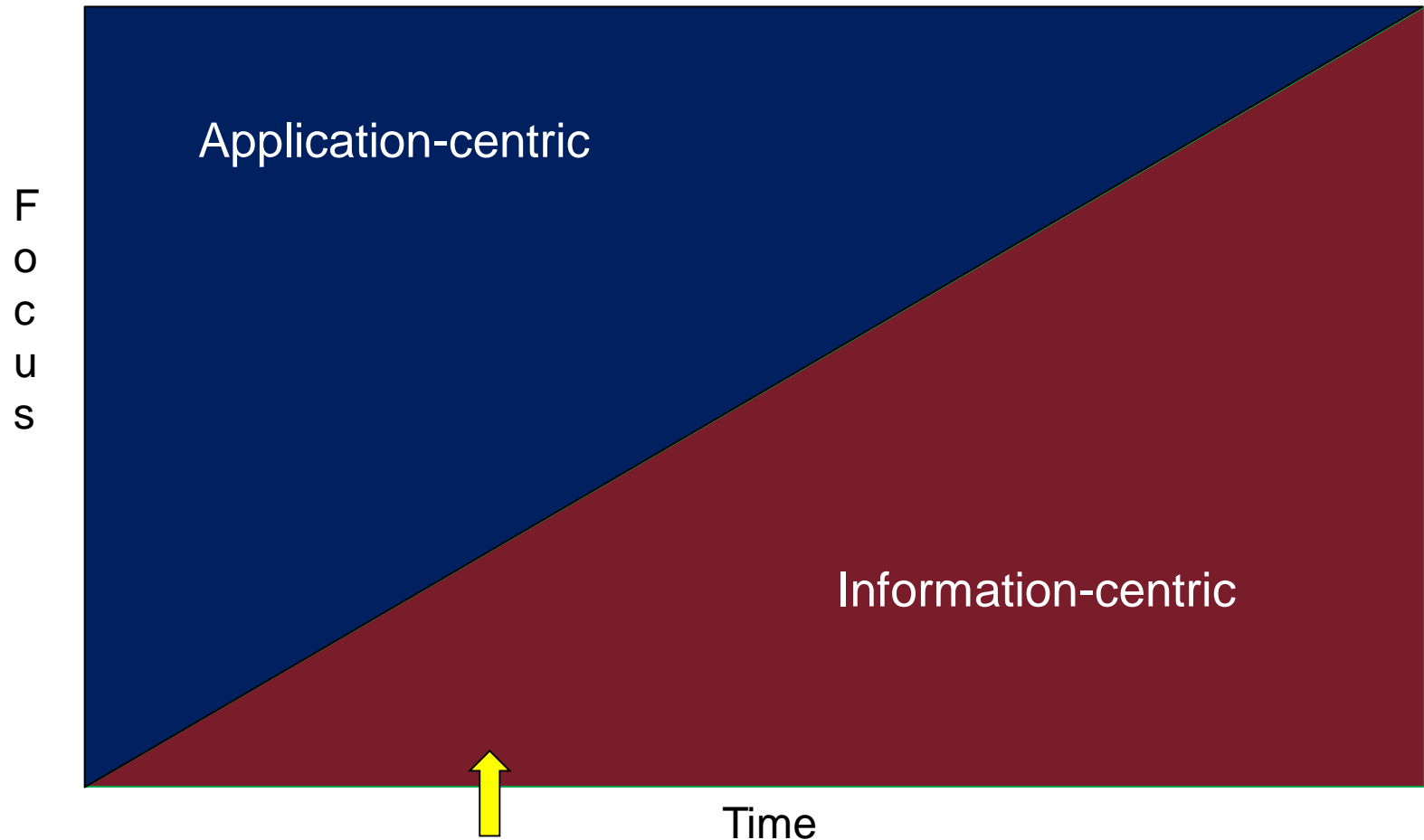
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- **Goal**
- **Integration Perspectives**
 - Historical
 - Current
 - Future
- **Enterprise Master Data Management (E-MDM) Example**
- **Summary**

Presentation's Goal

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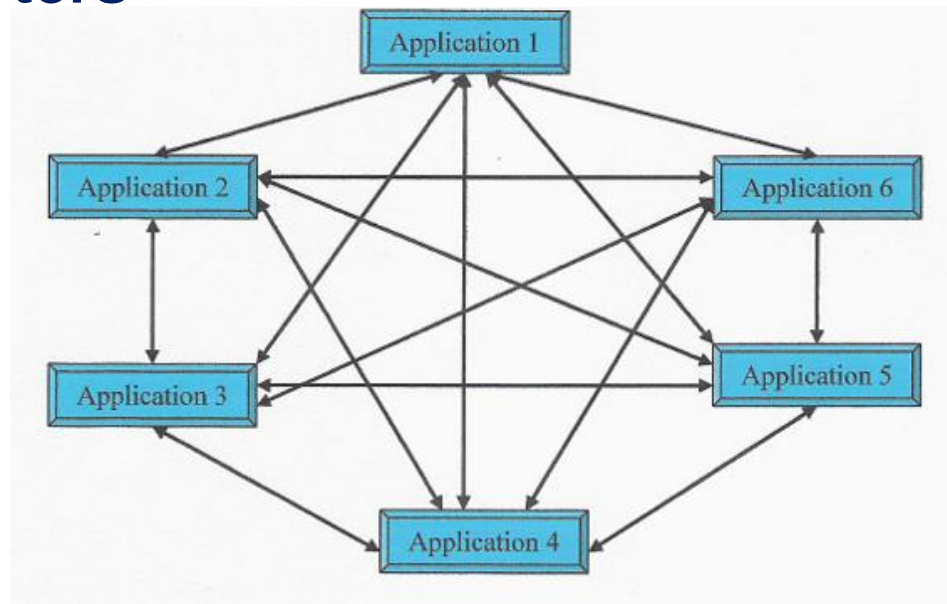
Integrations' Focus Must Change



Historical Perspective

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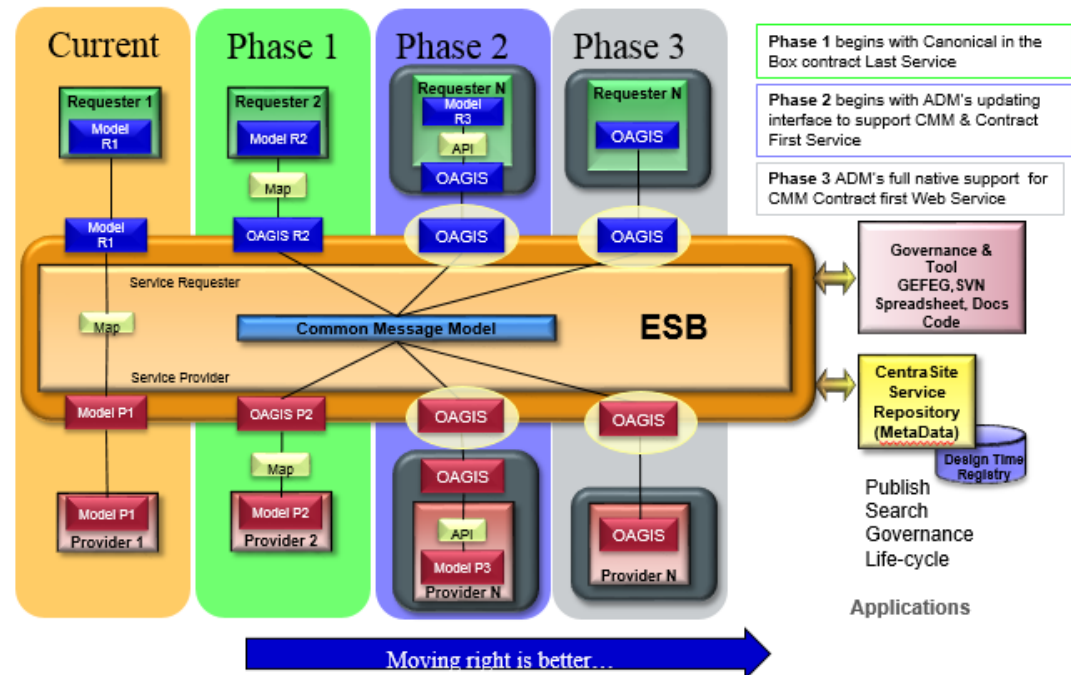
- **Emphasis on exchange for the purpose of extending applications' functionality**
- **Point-to-point solutions so applications can do their job**
- **Protocols were secondary (file based), although pub-sub had strong supporters**



Current Perspective

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- Emphasis on exchange for process improvements
- Service Oriented Architecture (SOA) so composition can fulfill processes – services and APIs dominate but data is secondary
- REST is the preferred protocol



Future Perspective

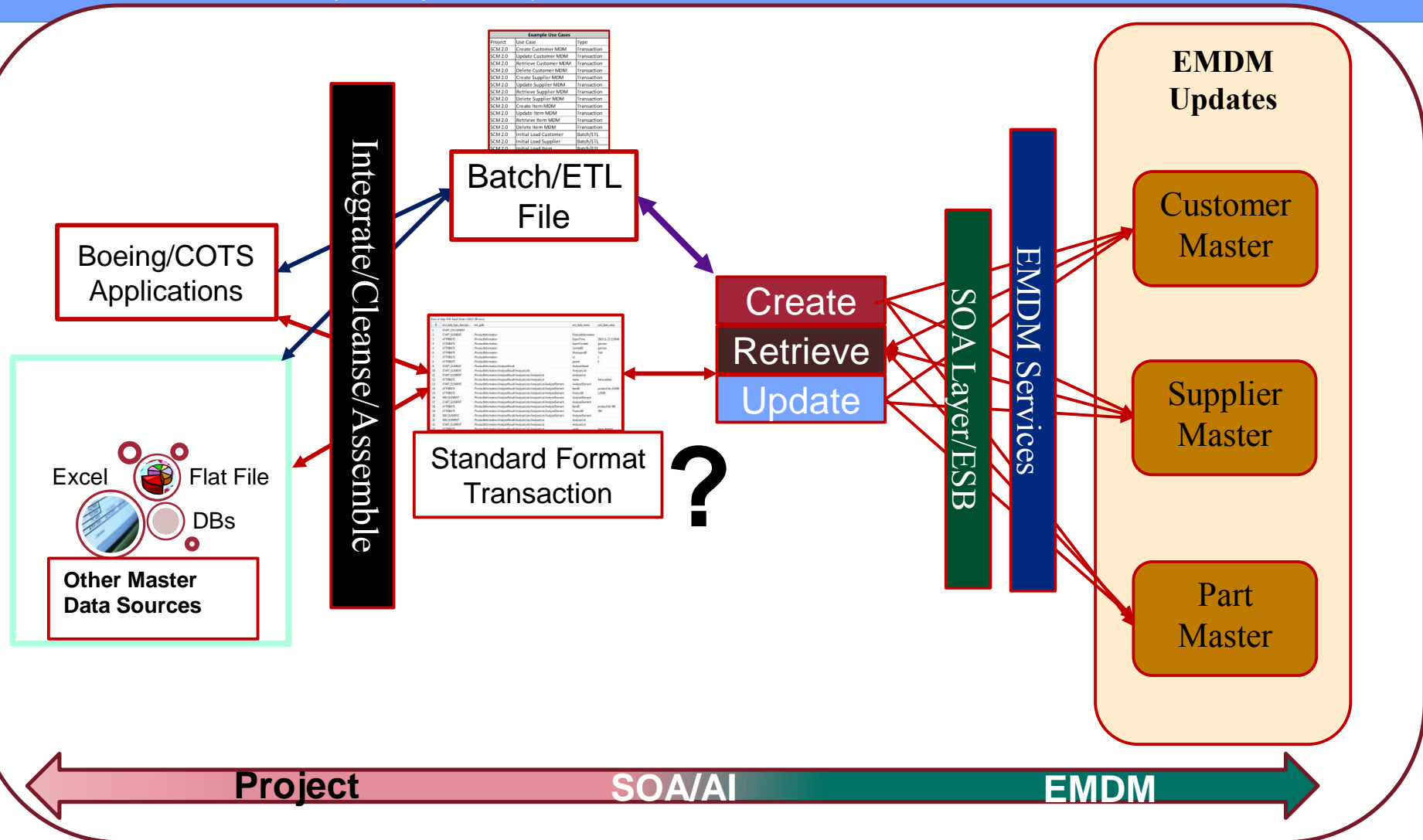
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- **Emphasis on exchange for the purpose of information collaboration**
- **Cloud services dominate**
- **APIs rule the protocol landscape**



E-MDM – High-Level, Logical Architecture

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Options Available to Enterprise MDM

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Options for Payload of Exchange	Pro/Con Analysis
Customize each interface uniquely	High cost as shown previously
Use the MDM vendor's format	Tie-in to MDM vendor
Use the predominant application vendor's format	Tie-in to prime COTS vendor
Use a standard based format	Abstraction yields long term cost savings and flexibility for changes

Existing Integration Project

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GOLD project had:

- 10 unique instances (sites)
- 117 applications in GOLD
- 7 different integration types
- 134 documented integrations per site

The migration to GOLDesp used OAGIS BOD* formats:

- 7+ times faster integrations
- Multiple removals of common integrations
- Quicker deployment options

**OAGIS is Open Applications Group Integration Specification; BOD is Business Object Document*

GOLD's Tools, Processes and Governance

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Tools

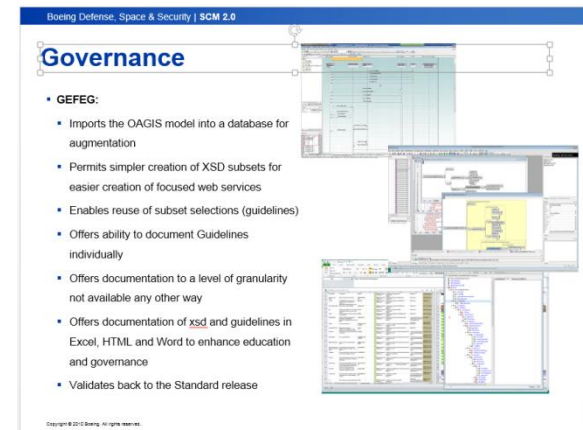
- GEFEG – Standard Tool (Installed, in use)
- XmlSpy – Enterprise Standard Tool
- Excel Spreadsheets – Enterprise Standard Tool
- Eclipse, Visual Studio, JSON, etc...

Processes

- Full lifecycle Boeing OAGIS BOD messaging (Guideline) development vetted
- Close working relationship with the OAGIS Standard Group
- Mutual understanding with the GEFEG vendor
- Full enterprise repository on-line yielding documentation, Java-Docs, Mapping sheets

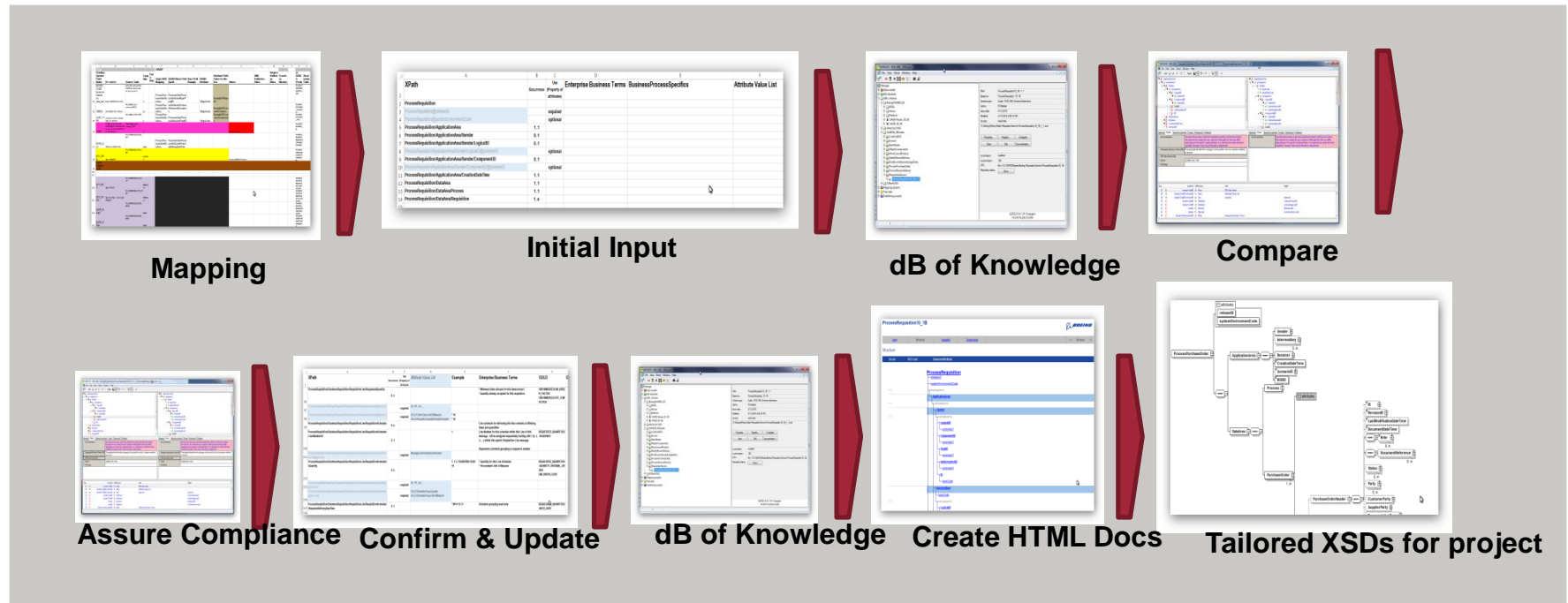
Governance

- Close working relationship with Ent Arch and Integ
- Define canonical governance processes for projects
- Boeing technical business core infrastructure components
 - OAGIS BOD Guidelines
 - Documentation, XSD's, XML's and WSDL's
 - SOARR
 - MetaData repository
 - Configuration Management (Subversion)



GOLD's Methodology

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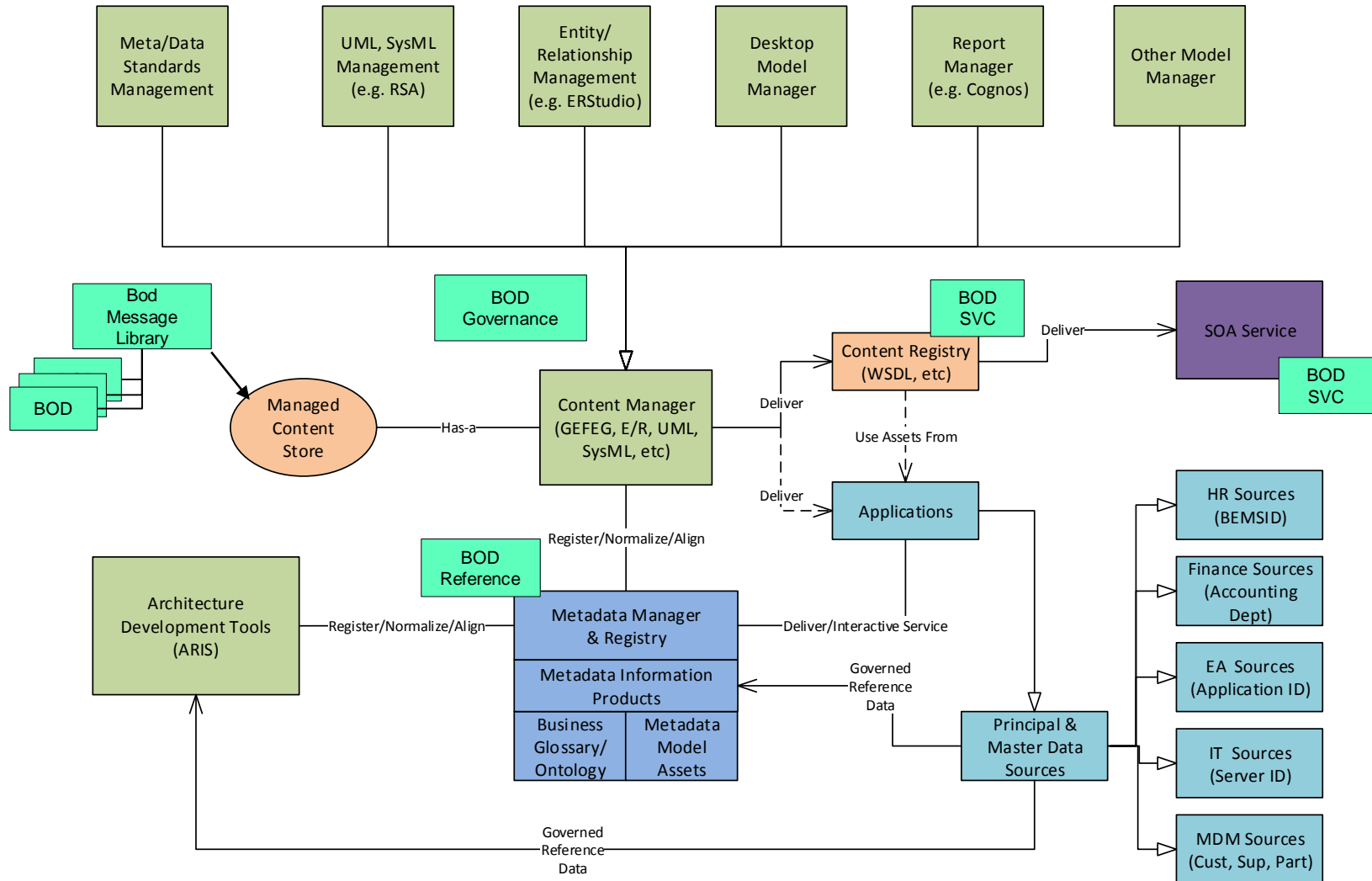


Under Configuration Management Control

- Using tools to combine, enable and control the knowledge exchange
- Using process to make things more consistent and repeatable
- Using a standard canonical to achieve a high degree of repeatability
- Using tooling to provide ability to govern and improve

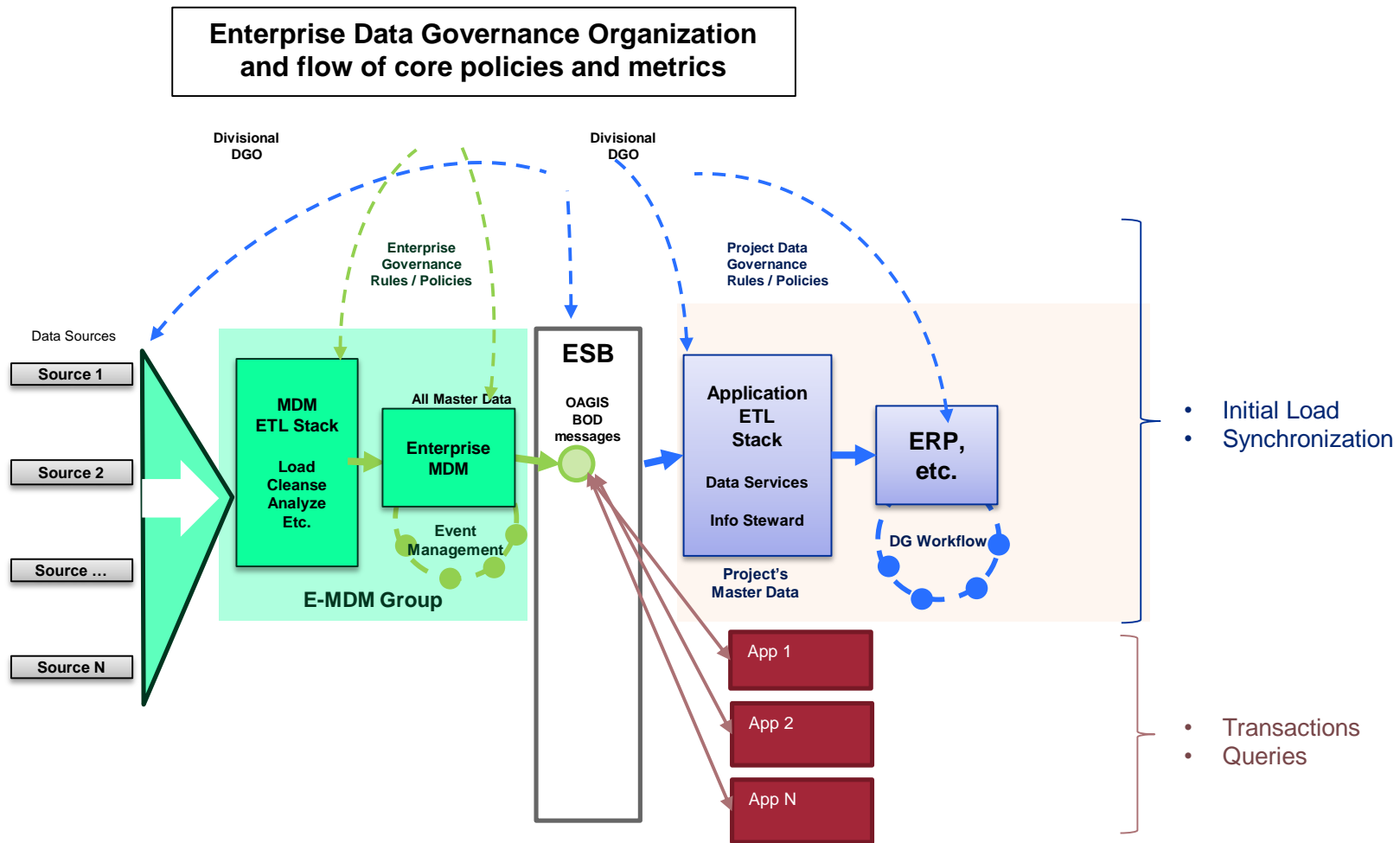
Enterprise Service Context Diagram

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E-MDM Data Flow and Governance

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E-MDM Project Wrap-Up

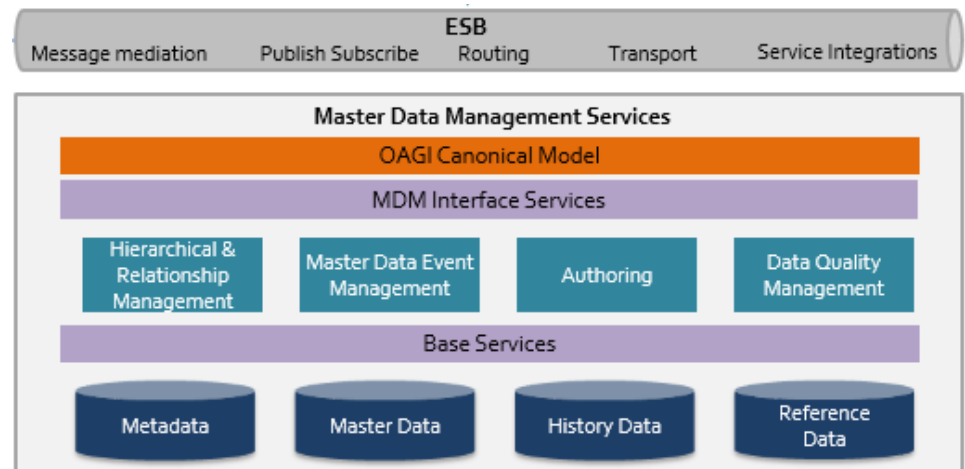
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For our E-MDM project, the information model of our MDM tool and of OAGIS aligned very closely.

Statistics on timings to do our web services are still being collected and analyzed, but having a starting baseline got us up and running very quickly.

The lack of Service Oriented Architecture (SOA) developers actually caused our biggest delay. At every phase of our project, reuse has proven more valuable than envisioned. For integrations, this has multiple benefits:

- Uniform interfaces
- Common development environment
- Common vocabulary
- Best practices optimized



Summary

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The journey and results of this project prove in a small microcosm that application integration work with a strong information focus yields tangible evidence of savings.

This same possibility is applicable to many other projects as well – perhaps even yours.

Questions?

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Recommendations:

- Organize canonical intermediaries around business entities (*such as BODS*), ensuring that they are able to convey information about all the events associated with that business entity (*i.e., have proper verbs associated with the entities above*), regardless of the applications in which those events occur (*data centric not application centric*)*

* Abstracted excerpt from a Gartner document