

**Master Data Management at R.R. Donnelley**  
*an Overview*

Scott Lee | MDM for the Enterprise | Nov 2007

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**R.R. Donnelley & Sons**  
*Represented by Scott Lee - Information & Integration Architect*

- Founded in the 1860's; headquartered in Chicago
- Largest print company in the world, with revenues of 12B \$USD
- Two main North American divisions:
  - Global Print Solutions (GPS): book, catalog, retail, directory, magazine
  - Global Solutions (GS): commercial print, forms & labels, fulfillment & logistics, print outsourcing
- Acquisitions-based growth strategy:
  - Astron Group (UK)
  - Banta, Perry-Judd's, et al. (USA)
  - Polographia (Poland)
  - APG (China, Southeast Asia)
- Scott Lee
  - Sr. Architect in Global Infrastructure Directorate of Corporate IT
  - 10 yrs experience as solutions designer, researcher, writer, business analyst, and developer
  - Deep background in enterprise application integration
  - Responsible for the technical excellence of the overall RRD master data management program

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**Master Data Management (MDM)**  
*Our understanding - a multi-faceted initiative addressing many concerns...*

**MASTER DATA**  
 ...is information about the key data entities that are *most important to the enterprise* such as Customer, Vendor, Material/Item, Product, or Employee

**MASTER DATA MANAGEMENT**  
 addresses...

<p><b>IT Challenges</b></p> <ul style="list-style-type: none"> <li>Multiple systems of truth</li> <li>Inconsistent data definitions</li> <li>Minimal business data stewardship</li> <li>Integrate acquisitions quickly and efficiently</li> <li>Rationalize IT systems</li> </ul>	<p><b>Business Strategies</b></p> <ul style="list-style-type: none"> <li>Growth through acquisitions</li> <li>Increase operating efficiencies</li> <li>Deepen customer relationships</li> <li>Fulfillment flexibility</li> </ul>
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Improve Data Quality

Increase Agility

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## Data Governance in Context

Our understanding - the engine that keeps MDM moving...



- If **Master Data** is data that is needed across business operations and for information consolidation purposes...
  - Focus: customer subject area
- then **Data Governance** is an organizing framework for establishing strategy, objectives, and policies for master data...
  - Focus: enterprise customer definition, high-level oversight, direction setting
- and **Data Stewardship** is the administration of master and source data from key applications to support a Master Data Management (MDM) effort
  - Focus: day-to-day execution of governance policies

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## R.R. Donnelley MDM 101

A three phase roadmap to incremental functionality, increasing value

### Consolidation Wave

- Identify sources
  - Profile data extensively
  - Determine and document data quality metrics, issues
- Engage and prep data stewards
- Build synchronizing integration; for each pipelined record...
  - Standardize and cleanse
  - Identify every customer record
  - Match to master database
    1. Create new master
    2. Merge into existing master
    3. Human workflow required
  - Permanently cross-reference source to master (c-ref)

### Dissemination Wave

- Events published for any change in master data state
  - Interested targets to pick data up from bus
  - Middleware to transform into target format where required
- ### Socialization Wave
- Goal: widespread use and adoption across the enterprise of the master customer identity
  - Make master B x-refs available in data warehouse environment - enable enterprise-scope reporting
  - Alter key systems to incorporate master customer data architecture

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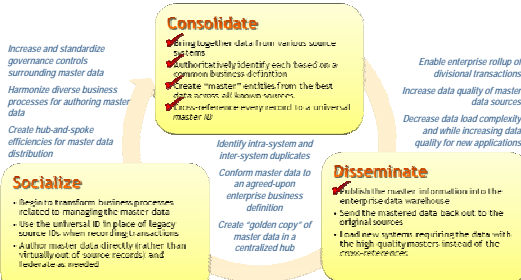
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## Master Data Lifecycle - Customer

As data management discipline evolves, organizational value increases



We've made good progress, but much value is yet to be achieved...

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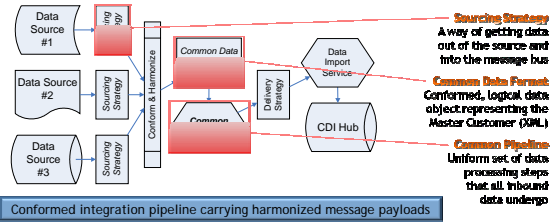
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## Customer Data Integration

*CDI projects present several integration problems*

- All sources have their own way(s) of viewing customer data
- Most legacy sources have poor data/event publishing capabilities
- New sources can require significant additional integration effort



**Sourcing Strategy**  
A way of getting data out of the source and into the message bus

**Common Data Format**  
Conformed, logical data object representing the Master Customer (XML)

**Common Pipeline**  
Uniform set of data processing steps that all inbound data undergo

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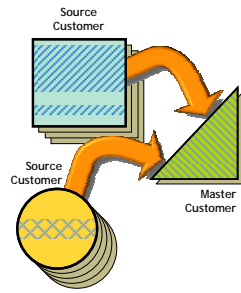
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## Data Sourcing Strategy

*Formulated by three basic data scoping questions*

- Source systems for customer data are different than the CDI hub:
  1. What record "grain"? **FROM**
  2. What sourcing scope? **WHERE**
  3. Which "mastered" fields? **SELECT**
- CDI grain should match the ideal business definition of customer
- In-scope source records should:
  - Support this definition
  - Meet minimum data quality guidelines
- Master fields should be limited to indicative data and a minimum of extra bulk




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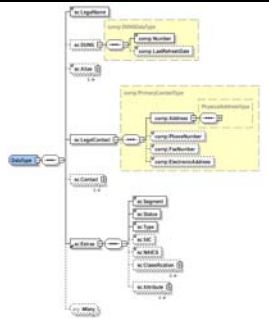
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## Conformed Data Definition

*The value of a uniform data architecture*

- The Master Customer data architecture is a physicalized refinement of the business definition for a customer
- Boilerplate solution value proposition
  - Single, known target for future sources providing customer feeds
  - Scale quickly - increase solution breadth
- Strong synergy with conformed data warehouse environment
- Tie into existing data architecture standards (XML, schemas, etc.)
  - If they aren't there already, then drive them with your CDI project!




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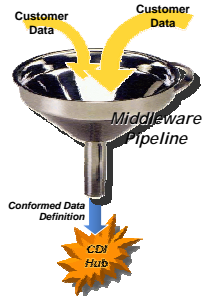
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## Uniform Data Processing Pipeline

*Conforming inbound customer data processing is a best practice*

- Uniformity - no "edge cases" or outliers in the process; everything works the same
- Custom rules for routing, data processing, lookups, mappings - all are encapsulated here
- Value-add services can be built once, deployed once, maintained in one place
- Simplicity sells - uniform process is easily communicable to executives; understandable concepts get funded
- Pipeline call-level-interface can easily be exposed to any SOA via XML/Web Services



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# THANK YOU!

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