MIS 5121: Business Processes, ERP Systems & Controls
Week 10: Master Data & Migration
Master Data
Table (Data) Types

Master Data

Configuration

Transaction Data

Nouns

Verbs

Control
Data Types

• Transaction Data
  — Data associated with single process ‘event’
    • Evidence of an event / activity
    • Logically Stored in process ‘Documents’ (vs. outputs)
    • Repetitive transactions (events) but data stored associated with each event / document
    • Has a Time dimension
  — Stored at various stages of a business process
    • e.g. Customer orders, purchase orders, production orders, customer payments

• Master Data
  — e.g. Materials, Customers, Vendors
  — Relatively stable
  — Used repeatedly in same way
    • Many transactions (see below)
Transactions flow down the river of time
Master Data

- Master Data is centrally stored (shared across application modules) and is processed to eliminate data redundancy.
- When creating business transactions (like a sales order) the system copies information from master data.
- Three kinds of master data are critical to order processing:
  - Customer: Defined by SD, shared with FI/CO
  - Material: Defined by MM, shared with SD, PP, FI/CO
  - Vendor Master: Defined by MM, shared with SD, PP, FI/CO
Master Data Internal Controls

What Internal Controls would you recommend exist for Master Data?
Master Data Internal Controls

Recommended Controls

– Process to define the ‘true’ data - leveraging external data, business policies where possible
– Trained ‘maker-checker’ enters / maintains the data including independent verification of source data
– Routine (quarterly?) review of critical field values changes (changes correct, authorized)
– Segregate ‘maker-checker’ / maintainer access from those performing the process (transactions)

‘Good to Have’ Controls

– Periodic (annual?) review of critical field values
– Validate data externally where possible (call phone #’s, Dunn & Bradstreet review, …)
– Assure 1-time records only used 1-time (not routine)
Key Information Technology Risks

- System Security
- Information Security Administration
- **Data Migration**
- Data Interface
- Instance Profile Security
- Change Management
- Transport Security
- Table Security
- Data Dictionary, Program and Development Security
- Logs and Traces
- Firefighter access
- Powerful User ID’s and Profiles
- Background Processing (Batch vs. foreground: real-time)
Data Migration: Control Concerns
Data Migration (Conversion)

Migration Magic

Legacy Systems

‘New’ ERP System
Data Migration: Flow

- Extract
- Clean
- Augment
- Transform
- Validate
- Load
- Reconcile
Data Migration – How??

We just need to migrate the data from these systems to fit into that hole over there.

I’ll get the hammer.

As long as the new system does exactly what our current system does we’re ready to move in.

We have a problem.
Data Migration: Process

Analysis

- Solid understanding of both source and destination systems (data structure, how used)
- Differences in data layout, use between systems
- Differences in data definitions
Data Migration: Process

**Data Mapping**
- Source data fields to fields, format required by new system
- Scope: what data will be migrated vs. not (history, activity level, relevance, etc.)
  - Master and ‘open’ transactions
  - History?
- Often involves logic (mapping rules)
  - From / to transformations
  - Transformation ‘rules’
Data Migration: Process

**Data Clean-up**

- Critical for successful migration (can move any data -> moving quality data that is business ready)
- Cleanse outdated, incorrect information from legacy systems
- Requires solid understanding of source data and destination requirements
- Define ‘rules’, requirements of high quality, business ready data
Data Migration: Process

Data Conversion (Complex)

- Transform programs
- Augment (as needed)
- Leverage a tool (e.g. BackOffice)
Data Migration: Process

Data Load and Reconciliation

• Meticulous planning and focused project management
• Dependencies (sequencing) (load and reconcile before proceed)
• Must be reconciled to legacy system (assure accurate, complete)
  – Records, field values
  – Quantities and $$ value
• Standard / custom reports – not difficult but critical
Data Migration: Risks

- All data & sources required are not identified
- Data dependencies not understood (load sequence)
- Data gaps exist
- Translation rules not fully understood to migrate data
- Legacy data is not complete or inaccurate
- Data relationships in legacy data compromised during migration
- Data transfer data errors not discovered timely and resolved
Data Migration: Control Objectives

- Data migrated from legacy systems is Accurate
- All data migrated to target system is Complete
- Synchronize data between legacy and target systems
  - Scope / Data ‘Freeze’
  - Dual Maintenance
- Data migrated to target system is recoverable and auditable
Data Migration / Interfaces Overview

Master Data
- Examples of
- Master data vs. Transaction data
- Controls (Few)

Data Migration (typically Project oriented)
- Risks (Few)
- Controls (Few)
Extra Slides
Config: Organization Structure