



California  
DEPARTMENT OF TECHNOLOGY



# The Project Academy Series: Pre-Implementation – Changing the Delivery Model

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# Introduction

## ■ Eric Steen

- Board of Equalization

- Project Director, Centralized Revenue Opportunity System (CROS)

## ■ Chris Kahue

- Board of Equalization

- Technical Project Manager, CROS

## ■ CROS Project



# Agenda

- Objective
- Delivery Challenges
- Approach for Overcoming Challenges
- Benefits
- Getting Started
- Q&A



# Objective

- Mitigate risk and increase likelihood of a successful implementation
- Begins with assessment of an organization's implementation readiness
- Ends with an organization that is motivated, involved, knowledgeable, and able to deliver



# Delivery Statistics

- Average success rate for IT projects is 32% (The Standish Group)
- Large IT projects [deliver] 56% less value than predicted (McKinsey & Company)
- Failure rate of IT projects with budgets > \$1 million is almost 50% higher than for projects with budgets < \$350,000. (Gartner)



# Delivery Statistics

- The failure rate for data migration projects is 38% (Bloor Research)
- Fewer than 30% of BI initiatives will align analytics completely with enterprise business drivers (Gartner)





# Delivery Challenges

- Department of Technology's *dirty dozen*
- Themes
  - Faulty or poorly defined requirements
  - Inability to convert data
  - Inability to exchange data, i.e., interfaces
  - Lack of organizational buy-in
  - Not knowing the size of the breadbox



# Strategy: Pre-Implementation

- **Pre-implementation**
  - Data Readiness
  - Interfaces
  - System Inventory
  - Business Rules
  - Business Processes
- **Conduct activities**
  - Prior to contract award
  - In parallel with procurement





# Data Conversion Challenges

- Lack of a comprehensive data dictionary
- Referential integrity enforced in the app
- PK/FK relationships require case-logic
- Orphaned records
- Multiple legacy data sources in differing platforms, formats, quality issues, etc.
- Repeating groups
- Complexity created by app changes
- Data quality



# Data Conversion Challenges

- Keeping cleansing in pace with new data
- Data in legacy siloes in conflict
- App changes not synced with DB changes
- Data quality rules in target system not applicable to converted data
- Target DB needs elements not in legacy data
- Reliance on synthetic data that may not reflect legacy data complexities



# Data Conversion Challenges

- 180 separate systems of varying complexity levels
- Primary system of record statistics
  - 1.8 billion records
  - 500 GB
  - 12,600 entities (512 tables, 12K fields)
  - 7.2 million taxpayer entities
  - Ave. 250 records per taxpayer
  - Prelim. data quality finding: 1.8% error rate



# Data Readiness

- How do we prepare ourselves for data conversion prior to implementation?
- Approach
  - Implement data quality tools (6,000 rules)
  - Establish a data staging repository
  - Establish data governance
  - Iteratively assess quality and fix problems



# Data Readiness

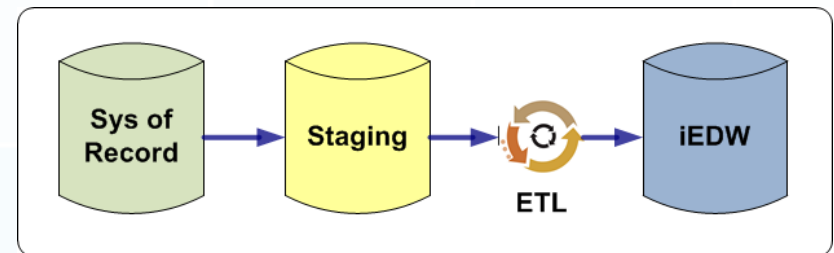
## ■ Approach (cont.)

- Document the data landscape

- Conduct BI activities

  - Assessment

  - Generate reports



- Establish real-time replication

- Enforce referential integrity in staging

## ■ Results

- Reduced errors and increased data quality

- Prepares organization for conversion



Data conversion security best practices:

<http://cio.ca.gov/opd/pdf/seminars/PA-InformationSecurityBestPractices.pdf>



# Interface Challenges

- Data sharing has evolved over time
- No complete, authoritative catalog
- Difficult to identify
- Data is varied and inconsistent
- Multiple individuals involved
- Data exchange not standardized; relies on
  - multiple tools and transports,
  - is highly manual, and
  - security practices differ.



# Interface Challenges

- Total number of interfaces identified: 143
- Manual interfaces targeted for automation: 98
- Fully automated interfaces: 20
- Partially automated: 25
- Inbound requiring transformation: 60





# Interface Readiness

- How do we ensure that the solution sends and receives the appropriate information?
- Approach
  - Catalogue and prioritize all external interfaces
  - Document interfaces: provider and consumer, contact info, medium, volume, frequency, file layout, sample data, and IAAs or MOUs
  - Collect associated IAAs and MOUs
  - Deploy a web-based catalog



# Interface Automation

## ■ Approach (cont.)

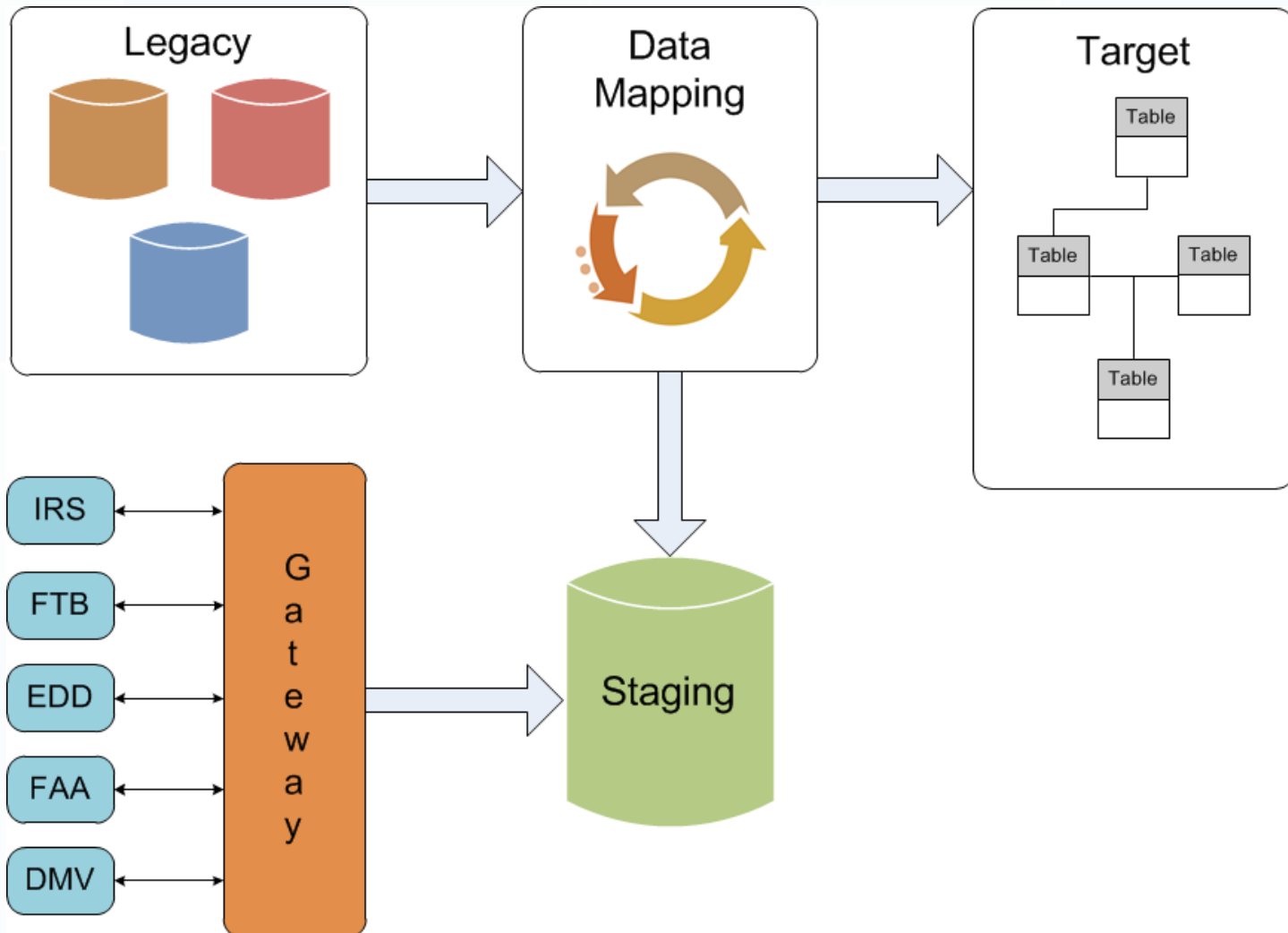
- Implement a B2B gateway
- Implement a service gateway
- Build a team to facilitate streamlining integration (high social complexity)

## ■ Results

- Assessed the size of the breadbox
- Handle activities in-house



# Tying it All Together





# Obligatory Dilbert Cartoon





# Scope Challenges

- Where deficient systems exist, workarounds exist
- Workarounds
  - Poorly documented
  - Scattered throughout the organization
  - Difficult to identify SMEs
- Represent significant scope impact
- Represent functional requirements
- Reflect interface or conversion effort



# Scope Challenges

## ■ Statistics

- Identified 180 systems within scope
- Not all housed within technology dept.
- Scattered across program area and ops
- Required many resources > 2 years to assess

“The largest number of data sources I have encountered on any one site runs into the low hundreds. We narrowed it down to 74... And, yes, we had been told in advance that all the information we needed was in three corporate systems.”

*Practical Data Conversion* by John Morris



# System Inventory and Scope

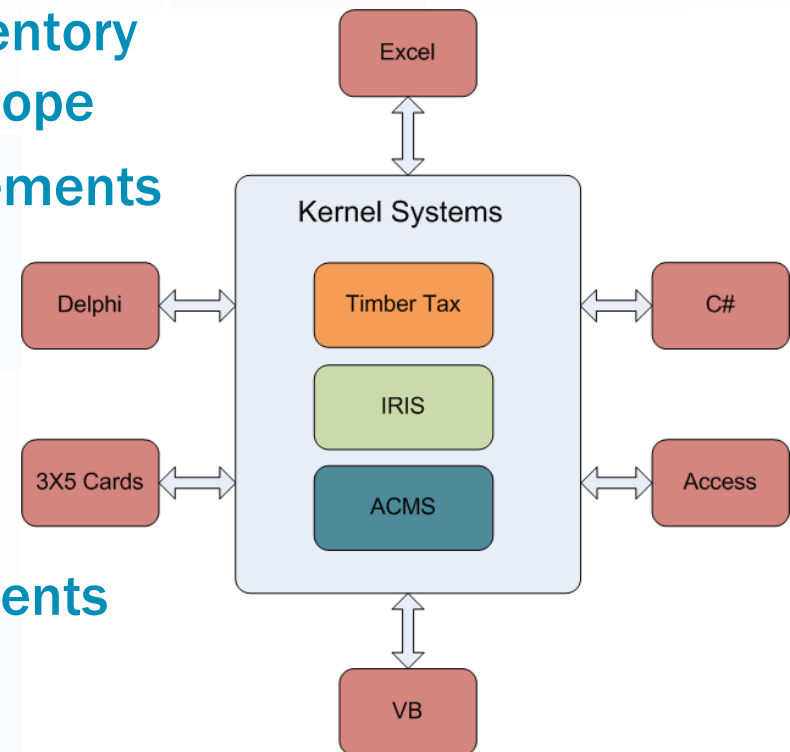
- How do we ensure that all ancillary systems are accounted for?

- Approach

- Identify and catalog the inventory of all workarounds within scope
- Evaluate for missing requirements
- Identify disposition: decommission, convert, or interface with

- Results

- Refines functional requirements
- Clarifies scope and LOE





# Requirements Challenges

- Difficult to thoroughly document depth and breadth of functional requirements
- Poorly written requirements are subject to interpretation
- Challenge to find subject matter expertise
  - Time consuming
  - Tendency to overestimate program-area knowledge
- Difficult to acquire enterprise buy-in





# Requirements Challenges

- **Confusion regarding a business rule vs. business process**
  - A business rule further defines a requirement, providing constraints
  - A business process is series of activities conducted by people or systems
- **Details reside in code, law, policy, people (experience, wants, needs)**
- **Of the 2162 functional requirements, 396 have detailed BRs**



# Business Rules

- How do we ensure that requirements are adequately defined?
- Approach
  - Recognize that high-level requirements are insufficient
  - Identify requirements that require rules
  - Identify subject-matter experts
  - Document business rules
  - Validate rules across enterprise
- Results
  - Provides details that define or constrain requirements
  - Reinforces subject matter expertise
  - Reduce the risk of making up rules as we go along



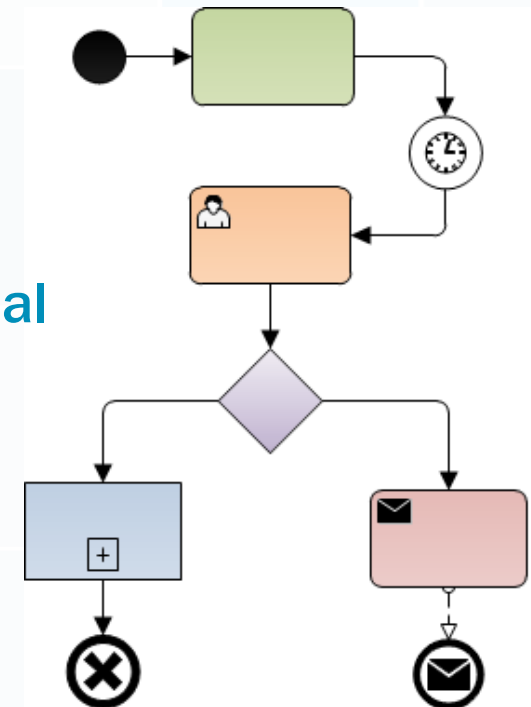
# Business Process Challenges

- Processes evolve over time and often become cumbersome
- Marked by redundant activities
- Operations exist in siloes
- Poorly documented
- Built around deficient systems
- Resistant to change



# Business Processes

- How do we streamline business processes in preparation for the solution?
- Approach
  - Mapped processes as input to functional requirements
  - Validated processes across enterprise
  - Identified areas for improvement
- Results
  - Provides an enterprise view of business
  - Establishes a core team with the authority and sponsorship to usher in change





# Benefits

- Mitigates risk
- Kick starts data-warehousing and BI
- Initiates change management *NOW*
- Utilizes in-house resources
- Prepares resources for implementation
- Increases awareness of the size and scope of the effort (breadbox)



# Benefits

- Awareness of data landscape
- Increased data quality
- More efficient data exchange
- Organizational buy-in
  - High morale
  - Low turnover rate
- Increased revenue



## Did we address themes?

- Faulty or poorly defined requirements
- Inability to convert data
- Inability to exchange data, i.e., interfaces
- Lack of organizational buy-in
- **Not knowing the size of the breadbox**



# Getting Started

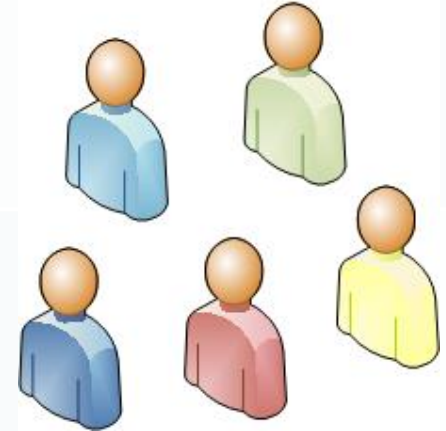
- **Change your mindset**
  - Your organization is responsible for success (or failure), not the vendor
  - Pre-implementation is key to successful implementation; don't wait for vendor arrival
  - You have no idea how big the breadbox is – so find out
- **Recognize the project as a critical enterprise objective**
- **Sell to the top – get executives on board**





# Getting Started

- **Prioritize accordingly**
- **Plan and budget for pre-implementation**
  - **Incorporate planning activities into FSR**
  - **Craft BCP accordingly**
- **Identify and dedicate qualified resources; backfill if necessary**





# Questions?

More information: [www.boe.ca.gov/cros/#Approach](http://www.boe.ca.gov/cros/#Approach)