Data Conversion: The Project Within an ERP Implementation Project

Vancouver Society of PM Professionals Seminar

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7 Deadly Sins of ERP Implementations (2005)

4ᵗʰ Deadly Sin – Treat Conversions as a Low Priority

If you want to ensure more delays and you happen to like the taste of Mylanta then don't prioritize converting data from your old system and making it readily available in the new system.

Data Conversion Realities

- Getting your conversions right is one of the most important parts of any implementation. Your data is dirty. Everyone's data is dirty. Inevitably you will find that when you come to convert you will have alpha-numeric fields, numeric only fields and you will have things in the wrong place. This is always a problem. And it's your problem.

- No vendor can help you with this. It's essential that if you want to start the new system with clean data, you make cleaning and fixing your data a priority as soon as possible because you will need to do it more than once and often several times.

- Equally important, you want your staff to be able to train using your own data and not just demonstration data so they can use real-life examples in their testing.

Data Conversion Remedies

- A structured and comprehensive conversion process will ensure a smooth transition from your old system to the new system. Only then can you move forward as far as testing the new system and training personnel.

Data Conversion Workshop

- Goal:
  - Gain an appreciation for the complexities of data conversions and how they integrate with ERP implementation projects
- Objectives:
  - Analyze the Data Conversion Scenario
  - Prepare a high level Data Conversion Scenario that addresses 3 of the 9 project management knowledge areas (scope, time, cost, quality, risk, communications, resources, procurement, integration)
  - Present the results to the group

Data Conversion Workshop

- Timeline
  - Divide into 6 groups. Choose a scribe and a presenter (5 minutes)
  - Review the Scenario (5 minutes)
  - Discuss the data conversion project and brainstorm key components of the 3 project management knowledge areas that you plan to highlight in the plan (15 minutes)
  - Document the plan (15 minutes)
  - Present the plan (5 minutes for each group)

Data Conversion Scenario #1 (Green-field):

A medium sized custom furniture manufacturing company (150 shop floor, 20 office staff) has chosen a new ERP system to help manage day-to-day financial and supply chain activities. The initial implementation will not include management of the production floor.

Current information systems for finance and supply chain are limited to Excel and an extremely outdated copy of QuickBooks. Limited reporting is available via canned QuickBooks reports. Spare parts and materials inventory numbers 10,000 unique items managed in a single Excel sheet. Parts warehouse is manually labelled, parts issued to jobs via manual forms. Requisitions, PO's and receiving are all completed on manual documents.

Your assignment as part of the implementation team is to prepare a data conversion strategy and plan for the program.

The strategy should focus on addressing risks and anticipated challenges with these PM Knowledge Areas Only: **Scope, Resources, and Quality**

The strategy should take the form of a data conversion plan / high level procedure and schedule that highlights these Knowledge Areas. The Data Conversion Plan should have these broad categories (Requirements, Resources, Quality Management) other categories may be added for context. Key elements in each section should be listed in point form.

Project Team from the ERP Vendor: One BA, One PM

Project Team from the client: 2 accountants; no other technical staff

Data Conversion Scenario #2 (No-Downtime):

A large computer manufacturing firm (Computech) has decided to replace its unsupported ERP with a new ERP. The legacy ERP is a commercial off the shelf package which is serving the company well, but because it is no longer supported by the vendor, it is a risk to the company and must be replaced.

While the company is being served well by the legacy ERP, there is a desire to expand the scope of the new ERP to include Payroll, Timekeeping, and HR. Presently, these systems are separate and non-integrated.

There are approximately 1000 employees in this company and over a million different parts in the inventory database in the ERP. The majority of these parts are no longer active but are not identified explicitly in the legacy ERP as such.

The business operates 24/7 and cannot afford any downtime during system cutover.

Your assignment as part of the implementation team is to prepare a data conversion strategy and plan for the program.

The strategy should focus on addressing risks and anticipated challenges with these PM Knowledge Areas Only: **Integration, Resources, and Quality**

The strategy should take the form of a data conversion plan / high level procedure and schedule that highlights these Knowledge Areas. The Data Conversion Plan should have these broad categories (Cut-Over Plan, Resources, Quality Management) other categories may be added for context. Key elements in each section should be listed in point form.

Project Team from the ERP Vendor: One BA, One PM

Project Team from the client: 3 IT staff (one DBA, 2 Application support analysts), 3 subject matter experts from Finance, Supply Chain, and Production. The organization is very lean, with every position fully committed to their 'day job'. There have been challenges already during the project, getting regular participation from team members.

Data Conversion Scenario #3 (Multiple Integrations):

A large (>1000 employees) railroad equipment (locomotives, passenger cars, light rail) maintenance company is experiencing steady growth; acquiring new customers for which it maintains their railroad equipment on service contracts. Saddled with an old and unsupported but effective ERP solution for Finance, Supply Chain, and Production floor, the company has elected to replace the ERP with a new ERP solution from a new vendor.

The current ERP is used for finance, supply chain, and work order management. Over the past 15 years, the company continued to use the out-dated ERP and a growing list of custom applications to enrich the functionality of the system for work order management, planning and billing as well as extend the system to other areas of the company such as time and expense capture, quality control and assurance and document management. At present, there are 20 loosely integrated applications tied into the legacy ERP.

See diagram on next page for scope of ERP Implementation

The company wants to implement in 9 months. There is extreme pressure to go-live on the financial year-end and little appetite for delay.

Your assignment as part of the implementation team is to prepare a data conversion strategy and plan for the program.

The strategy should focus on addressing risks and anticipated challenges with these PM Knowledge Areas Only: **Scope, Procurement, and Schedule**
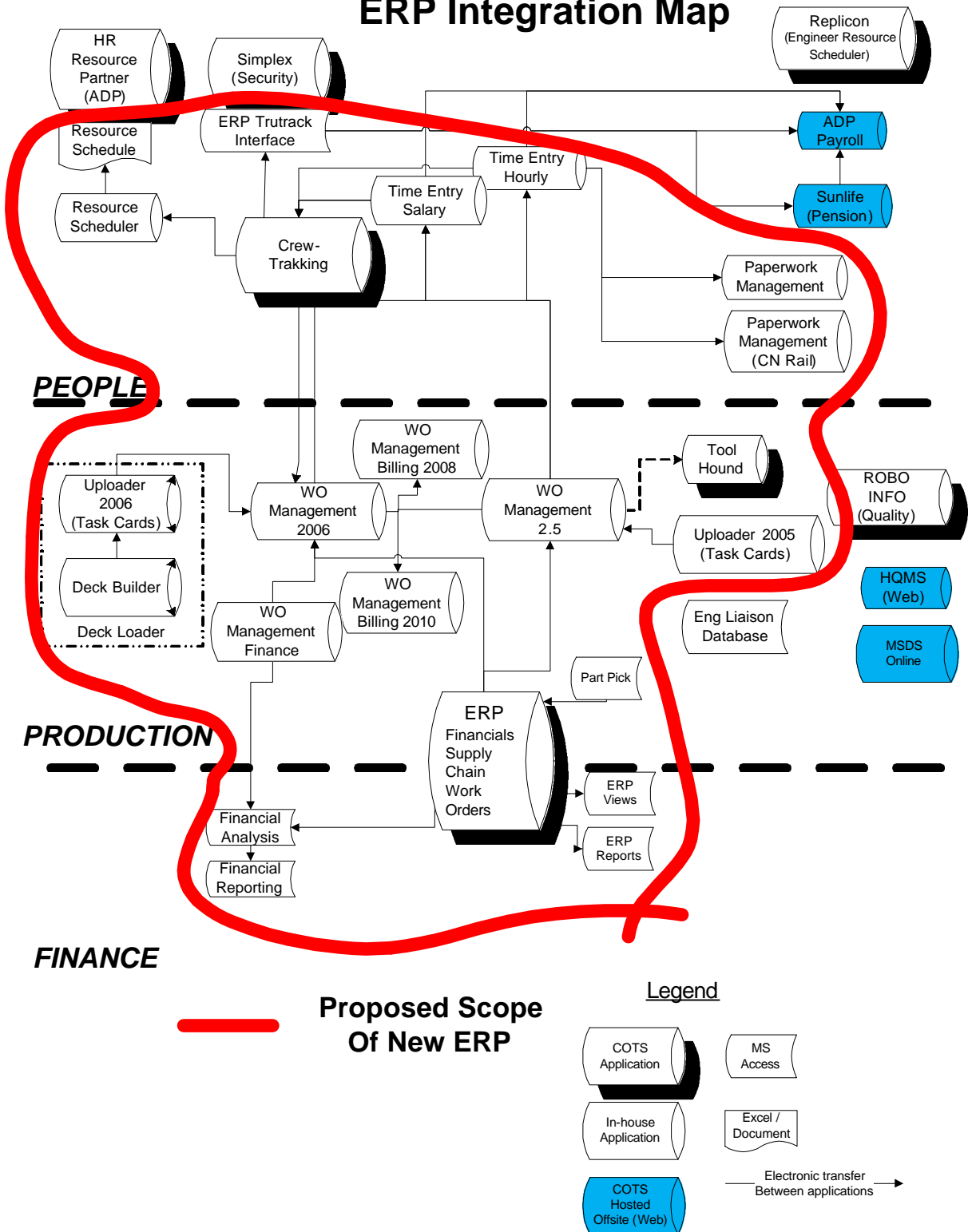
The strategy should take the form of a data conversion plan / high level procedure and schedule that highlights these Knowledge Areas. The Data Conversion Plan should have these broad categories (Requirements, Procurement, Schedule) other categories may be added for context. Key elements in each section should be listed in point form.

Project Team from the ERP Vendor: One BA, One PM

Project Team from the client: 2 accountants; no other technical staff. IT is presently outsourced to a couple of independents. Writers of the custom applications are no longer available.

Railroad Maintenance Co.
ERP Integration Map

HR Resource Partner (ADP)

Simplex (Security)

Replicon (Engineer Resource Scheduler)

Resource Schedule

ERP Trutrack Interface

Time Entry Hourly

ADP Payroll

Resource Scheduler

Time Entry Salary

Sunlife (Pension)

Crew-Trakking

Paperwork Management

Paperwork Management (CN Rail)

PEOPLE

WO Management Billing 2008

Tool Hound

ROBO INFO (Quality)

Uploader 2006 (Task Cards)

WO Management 2006

WO Management 2.5

Uploader 2005 (Task Cards)

HQMS (Web)

Deck Builder

WO Management Billing 2010

Eng Liaison Database

MSDS Online

Deck Loader

WO Management Finance

Part Pick

PRODUCTION

ERP Financials Supply Chain Work Orders

ERP Views

Financial Analysis

ERP Reports

Financial Reporting

FINANCE

━━━━ **Proposed Scope Of New ERP**

Legend

COTS Application

MS Access

In-house Application

Excel / Document

COTS Hosted Offsite (Web)

Electronic transfer Between applications →

Data Conversion Scenario #4 (Data Model Conversion):

A timber company manages private forest land in the U.S. totalling 800,000 acres. Within this established tree farm are in excess of 8,000km of roads. The current Geographic Information System (GIS) manages each of these roads as 'segments', where each segment is a unique combination of 4 attributes (Road Type, Condition, Planned Condition, and Owner). A Segmented data such as this requires the creation/splitting of a segment whenever one of the attributes changes.

To enable a more efficient management of this data set, a conversion of the 'segmented' data to a 'linear referenced' data model is desired. A 'linear referenced' data model manages each road as a 'route' and the different attributes as 'measures' (from/to) along the route. Modifying any attribute of the road, simply requires the update of tabular 'measures' for the route. Specialized GIS software simply displays these thematically on the map. The separation of the data set into additional segments is no longer required.

This data conversion is part of the overall company-wide implementation of a new Timberlands Management System, which includes other areas of the business such as Short Term Planning, Silviculture (tree farm treatments post-harvest), and Harvest Management. The conversion of this data set presents a number of challenges. Based on previous company's experience with this conversion, the project team is aware that:

1) Legacy road data is fraught with data integrity issues ranging from invalid to incorrect data

2) If the conversion can be scripted (desirable), the time required to execute a single run of this conversion will take between 48 and 72 hours

3) Following the conversion, an extensive quality assurance must be performed to identify conversion errors and to assess the effort of post conversion cleanup. Each conversion requires 40 person hours of QA.

Your assignment as part of the implementation team is to prepare a data conversion/ conversion strategy for the program.

The strategy should focus on addressing risks and challenges in these PM Knowledge Areas Only: **Resources, Schedule, and Cost Control**

The strategy should take the form of a data conversion plan / high level procedure and schedule that highlights these Knowledge Areas. The Data Conversion Plan should have these broad categories (Resources, Conversion Procedure, Schedule) other categories may be added for context. Key elements in each section should be listed in point form.

Data Conversion Scenario #5 (Two ERP's into One):

A Canadian mining company has acquired operating mining assets in Peru. There is a desire to integrate information systems at all mining operations for financial reporting purposes. The company has selected a new Tier 1 ERP system to replace both legacy ERP systems.

The company operates in both English and Spanish, however prepares one company annual report in English.

The scope of the legacy ERP's is similar: Financials, Supply Chain, Mine Operations (maintenance work orders, preventative maintenance planning, scheduling, and time capture).

The company's desire is to implement the new ERP in one configuration, taking the best business practices of both countries and implementing them. The nightmare of making this work is not the focus of your discussion. Your task is simply to prepare a data conversion strategy to enable this goal.

The mines operate in a process environment, operating their mines and smelting plants 24/7. Each location employs approximately 1000 people. Administration functions are presently decentralized and will remain so.

Your assignment as part of the implementation team is to prepare a data conversion/ conversion strategy for the program.

The strategy should focus on addressing risks and challenges in these PM Knowledge Areas Only: **Scope, Schedule, and Communications**

The strategy should take the form of a data conversion plan / high level procedure and schedule that highlights these Knowledge Areas. The Data Conversion Plan should have these broad categories (Requirements, Conversion Procedure, Communication Plan) other categories may be added for context. Key elements in each section should be listed in point form.

Project Team from the ERP Vendor: Two international teams: Coordinator, 2 BA's, 2 Data Conversion experts in each country. Spoken language is English.

Project Team from the client:

> Peru (Spanish): Project Manager, Production Supervisor, and Payroll Subject Matter Experts. Spoken language is Spanish only

> Canada (English): Financial Reporting lead, Production Supervisor, and Payroll Subject Matter Experts (SME's)

One of the many questions that are asked of ERP implementation data conversion teams is to determine which data are cleaned up pre-conversion an d which data are cleaned up post-conversion (i.e. after the new ERP is in production).

In this scenario, the iron triangle of Scope, Schedule, and Cost is tested on our Data Conversion project.

The table below in a very simplified manner identifies different data artefacts that have been analysed for their cost and time to convert to the new ERP. Given a limited Schedule and Cost, you must determine which data (Scope) are going to be cleaned up prior to conversion, and which data will be cleaned post-conversion (Out of Scope). The total available time **and** cost for pre-conversion must be respected.

Present your analysis approach, the total time and cost for pre and post and an explanation for your decisions to cleanup pre or post.

Static Data are tables are used for reference and in and of themselves are contributors to **Dynamic** data artefacts. Code Tables or lookups are common types of static data. Purchase Orders, Work Orders, Time Slips, etc are examples of dynamic data.

This particular ERP allows the loading of 'invalid' data through the back-door via SQL scripts. However, these data are flagged in 'red' on the user interface and a user opening a record containing invalid data will be required to fix the data before closing and saving changes to the form (artefact). For example, a converted PO with invalid units of measure (UOM) will need to be corrected prior to saving changes to the PO.   Furthermore, reporting is made more difficult with invalid data in the system.

Hint: Pre or Post conversion cleanup decisions should consider the number of users that may be impacted by opening invalid artefacts. For example, 3 staff in the HR department opening invalid employee records twice a month, vs. 8 storeroom staff opening invalid inventory records 10 times a day.

No.	Data Artefact	Pre-Conversion Cleanup Cost $	Pre-Conversion Cleanup Time (days)	Post-Conversion Cleanup Cost ($)	Post-Conversion Cleanup Time (days)	Selection Pre? Or Post?
1	*Static:* Customer	100	3	100	3	
2	*Static:* Employee	100	8	100	8	
3	*Static:* Parts Code Tables (lookups)	80	4	80	4	
4	*Static:* Purchasing Code Tables (lookups)	10	5	10	5	
5	*Static:* Production Code Tables (lookups)	50	10	10	10	
6	*Static:* Chart of Accounts (new structure proposed)	100	5	400	20	
7	*Dynamic:* Employee HR Records	20	2	10	2	
8	*Dynamic:* Past Time Slips	40	10	40	10	

No.	Data Artefact	Pre-Conversion Cleanup Cost $	Pre-Conversion Cleanup Time (days)	Post-Conversion Cleanup Cost ($)	Post-Conversion Cleanup Time (days)	Selection Pre? Or Post?
9	*Dynamic:* Current Time Slips	20	5	40	10	
10	*Dynamic:* GL	10	3	100	10	
11	*Dynamic:* Closed PO	50	8	20	5	
12	*Dynamic:* Closed WO	50	8	20	5	
13	*Dynamic:* Parts/Inventory	300	25	500	20	
14	*Dynamic:* Open Work Orders	20	4	100	10	
15	*Dynamic:* Open Purchase Orders	20	4	100	10	
16	*Dynamic:* Open Invoices	10	2	20	4	
17	*Dynamic:* Paid Invoices	10	2	5	1	

Total Available Time Pre-Conversion: 60 days

Total Available Cost Pre-Conversion: $1000

Team Analysis:

Total Time Allocated for Pre-Conversion Cleanup: _____

Total Cost Allocated for Pre-Conversion Cleanup: _____

Total Time Allocated for Post-Conversion Cleanup: _____

Total Cost Allocated for Post-Conversion Cleanup: _____