

HOW TO IMPLEMENT PPDM?

BUILD, BUY OR BOTH?

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WHAT IS THE BIGGEST IMPEDIMENT?

Getting Started!

WHAT DO YOU NEED?

- (Global) Information Vision
 - Clear statement of how enhanced information base will help the business achieve its strategic objectives
 - State in business terms with a clear link to the competitive positioning in the business
 - Define / explore the pay off
- Developing a Methodology
 - Review existing data flow
 - Understanding changes to data and workflow – needed and desired
 - Separate the low hanging fruit from the long term rewards – you will need both!
 - Come up with a Data Governance Proposal / Methodology

WHAT DO YOU NEED?

- Build/Choose/Buy
 - Data Model – PPDM 
 - Data Loading Tools
 - Data Validation (QC/QI)
 - Data Browsing / Viewing / Searching Framework
 - Data Presentation layer – GIS 
 - Data Integration and Delivery– Middleware, SOAP.....

FORK IN THE ROAD, BEFORE YOU BEGIN

- BUILD

- Do you build from scratch so have 100% compatibility with what you need?
- Do you then continue to maintain said systems in-house?

Or

- BUY

- Are their solutions out there?
- Do you buy an out-of-the-box 80% PPDM solution and then spend your money customizing it?
- Do you then continue to maintain the customizations in-house?

COMPANY X

- 5TB of well data including header, tops, deviation, tests, production, logs, well reports, maps, cross sections
- Moving from Project-based Data (*Mis*)Management to Master Data Management
- Should they Build or Should they Buy?

BUILD: DB CONSIDERATIONS

- Choose Database technology (Oracle/SQL Server/PostGres SQL.....)
- Choose PPDM Version (3.7/3.8)
- Implement Schema
 - Tables and columns with comments
 - Primary and Foreign Keys
 - Constraints
 - Indexes
 - Units of Measure constraints
- Add missing components
 - Audit triggers
 - Cascade deletes
 - Views and queries
 - Security - users, roles

BUILD: DATA LOADING TOOLS

- Understand Load of the Rings!
- Build Well Data Loading tools
 - IHS Data loader
 - ASCII importer
- Build Production Data Loading
 - SQL connection to internal production database
- Well Log loading
 - Build file based Digital log loading tools (LAS, LIS, DLIS)
 - Build Depth Registered Raster Loading tools (TGS smart rasters, MJ, Petra LIC and Geographix DRA – some)
- Link to Well Files on disk
 - Well Reports

BUILD: DATA BROWSING AND PRESENTATION

- User Interface to view and query data
 - Easy to use interface
 - Simple and advanced queries
- Spatial Presentation
 - Spatialize PPDM
 - Display data on map
 - Spatial queries
 - Integrated cross-domain searches on map

BUILD: DATA DELIVERY

- Simple data export
- Simple file extract
- ETL tools for delivering data to project data stores
 - Petra
 - OpenWorks
 - Kingdom

WHAT CAN YOU BUY?

Components	Available to Purchase through multiple vendors
PPDM Database (with audit triggers, cascade deletes, views, queries, security, reference value management)	Out of the box
Well data loading tools	Out of the box
Production loading tools	Out of the box
Digital log data loading tools	Out of the box
Depth registered raster logs loading tools	Out of the box
Unstructured logs and documents loading tools	Out of the box
Data Browsers	Out of the box
GIS Integration tools	Out of the box
Middleware, Data Delivery tools	Out of the box
Connections to Daily Production	Out of the box
QC/QI/Validation tools	Require on-site configuration\customization
Connections to non-E&P Document Management	Require on-site configuration\customization
Integration with in-house Intranet, Web Portals	Require on-site configuration\customization

LET'S DO THE NUMBERS: BUILD

Components	Development Cost (one time)	Support Cost (annual)
PPDM Database (with audit triggers, cascade deletes, views, queries, security, reference value management)	To be filled interactively	
Well data loading tools		
Production loading tools		
Digital log data loading tools		
Depth registered raster logs loading tools		
Unstructured logs and documents loading tools		
QC/QI/Validation tools		
Data Browsers		
GIS Integration tools		
Middleware, Data Delivery tools		
Connections to Daily Production		
Connections to non-E&P Document Management		
Integration with in-house Intranet, Web Portals		

SURVEY SAYS: BUILD COSTS ARE

Components	Development Cost	Support Cost
PPDM Database (with audit triggers, cascade deletes, views, queries, security)	\$ 62,500.00	\$ 31,250.00
Well data loading tools	\$ 250,000.00	\$ 125,000.00
Production loading tools	\$ 250,000.00	\$ 125,000.00
Digital log data loading tools	\$ 250,000.00	\$ 125,000.00
Depth registered raster logs loading tools	\$ 250,000.00	\$ 125,000.00
Unstructured logs and documents loading tools	\$ 250,000.00	\$ 125,000.00
QC/QI/Validation tools	\$ 375,000.00	\$ 250,000.00
Data Browsers	\$ 500,000.00	\$ 125,000.00
GIS Integration tools	\$ 250,000.00	\$ 125,000.00
Middleware, Data Delivery tools	\$ 750,000.00	\$ 250,000.00
Connections to Daily Production	\$ 62,500.00	\$ 62,500.00
Connections to non-E&P Document Management	\$ 125,000.00	\$ 125,000.00
Integration with in-house Intranet, Web Portals	\$ 125,000.00	\$ 125,000.00
Total	\$ 3,500,000.00	\$1,718,750.00

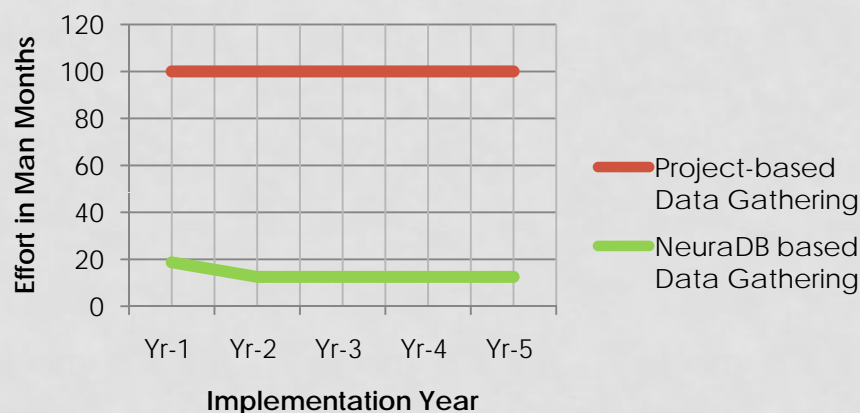
Inc. 2010

BUY NUMBERS FOR COMPANY X

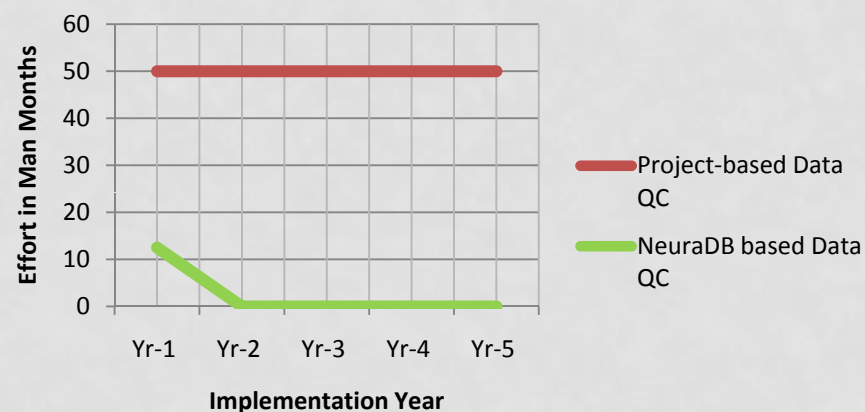
Components	Available to Purchase through multiple vendors	Cost	Support
PPDM Database (with audit triggers, cascade deletes, views, queries, security, reference value management)	Out of the box	\$ 850,000.00	\$ 170,000.00
Well data loading tools	Out of the box		
Production loading tools	Out of the box		
Digital log data loading tools	Out of the box		
Depth registered raster logs loading tools	Out of the box		
Unstructured logs and documents loading tools	Out of the box		
Data Browsers	Out of the box		
GIS Integration tools	Out of the box		
Middleware, Data Delivery tools	Out of the box		
Connections to Daily Production	Out of the box	\$ 480,500.00	\$ 96,100.00
QC/QI/Validation tools	Require on-site configuration\customization		
Connections to non-E&P Document Management	Require on-site configuration\customization		
Integration with in-house Intranet, Web Portals	Require on-site configuration\customization		

BENEFITS OF MASTER DM

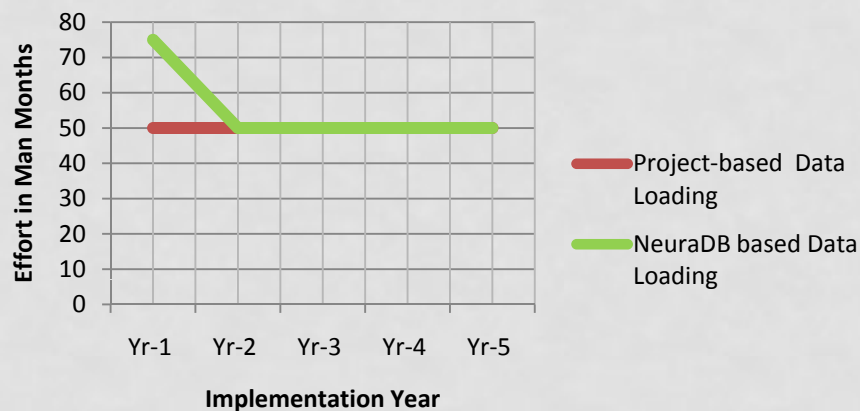
Time Spent Data Gathering



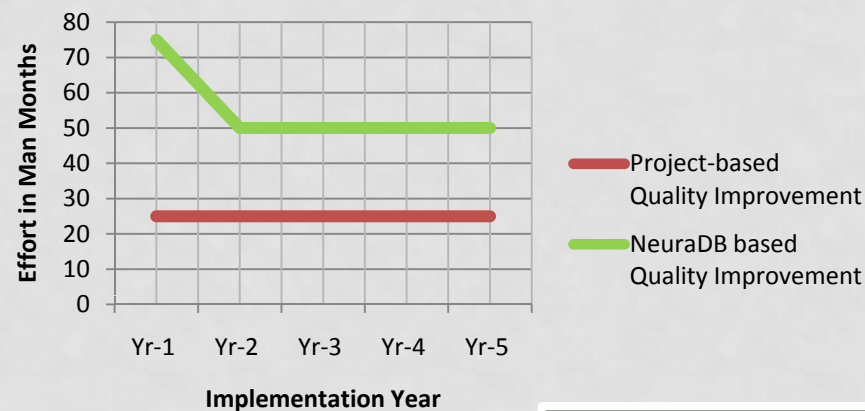
Time Spent in Data Quality Control



Time Spent in Data Loading

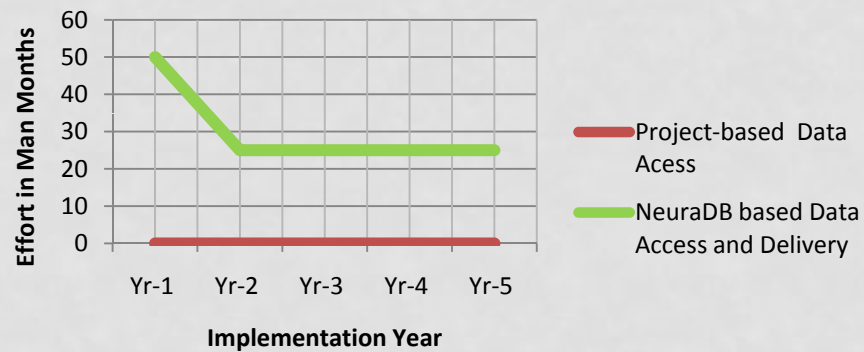


Time Spent in Quality Improvement

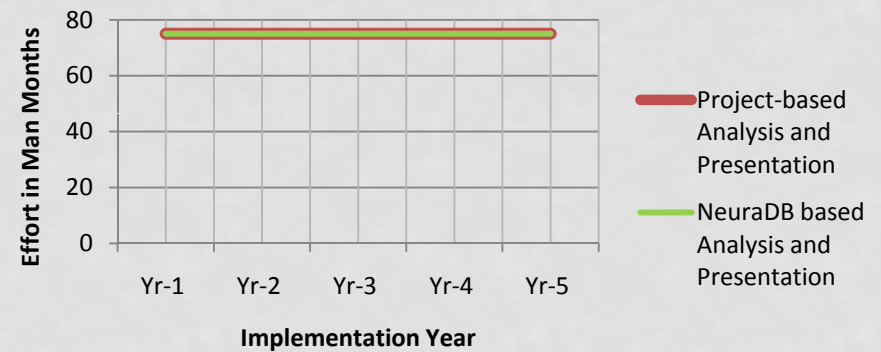


BENEFITS OF MASTER DM

Time Spent in Data Access and Delivery



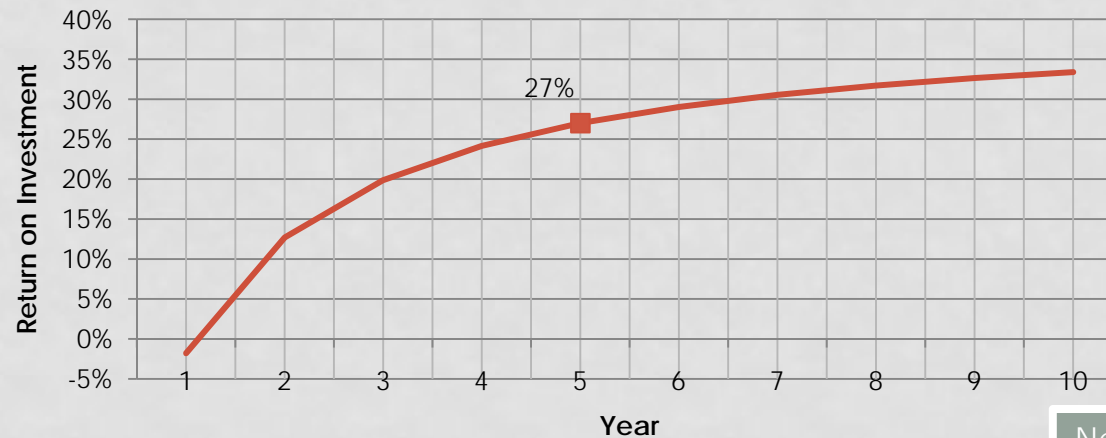
Time Spent in Data Analysis and Presentation



ROI WHEN BUILDING FROM SCRATCH

Year	Annual \$ Savings on annual operating costs when using PPDM over Project-based Data Management	Annual Investment when implementing PPDM (HW/SW/customization/maintenance/administration costs)	NPV of Total Savings @6%	NPV of Total Cashflow @6%	ROI
1	\$ (62,500.00)	\$ 3,500,000.00	(\$58,962.26)	\$3,301,886.79	-2%
2	\$ 755,000.00	\$ 1,718,750.00	\$612,985.05	\$4,831,568.17	13%
3	\$ 755,000.00	\$ 1,718,750.00	\$1,246,897.61	\$6,274,663.82	20%
4	\$ 755,000.00	\$ 1,718,750.00	\$1,844,928.32	\$7,636,074.80	24%
5	\$ 755,000.00	\$ 1,718,750.00	\$ 2,409,108.24	\$ 8,920,424.78	27%

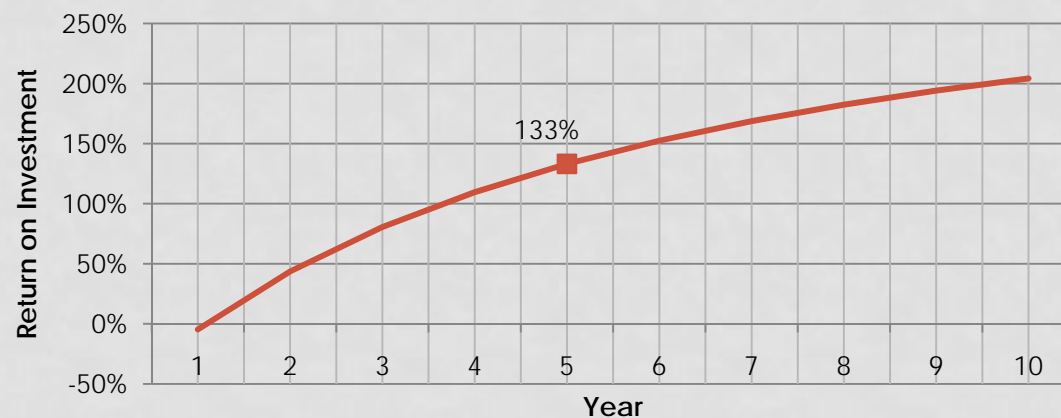
Change in ROI



ROI WITH BUY AND CUSTOMIZE

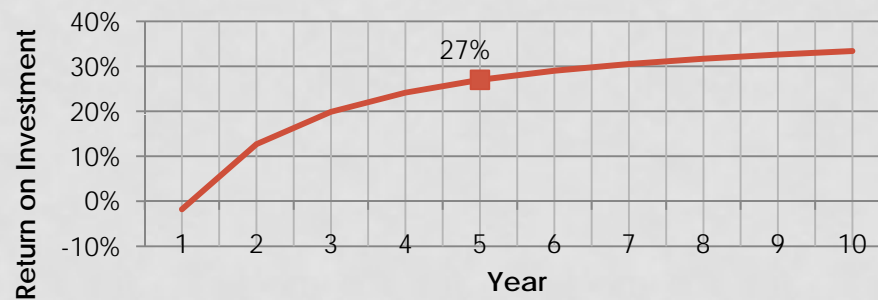
Year	Annual \$ Savings on annual operating costs when using NeuraDB over Project-based Data Management	Annual Investment when implementing PPDM (HW/SW/customization/maintenance/administration costs)	NPV of Total Savings @6%	NPV of Total Cash flow @6%	ROI
1	\$ (62,500.00)	\$ 1,330,500.00	(\$58,962.26)	\$1,255,188.68	-5%
2	\$ 755,000.00	\$ 169,490.00	\$612,985.05	\$1,406,034.18	44%
3	\$ 755,000.00	\$ 169,490.00	\$1,246,897.61	\$1,548,341.25	81%
4	\$ 755,000.00	\$ 169,490.00	\$1,844,928.32	\$1,682,593.20	110%
5	\$ 755,000.00	\$ 169,490.00	\$2,409,108.24	\$1,809,245.99	133%

ROI over time

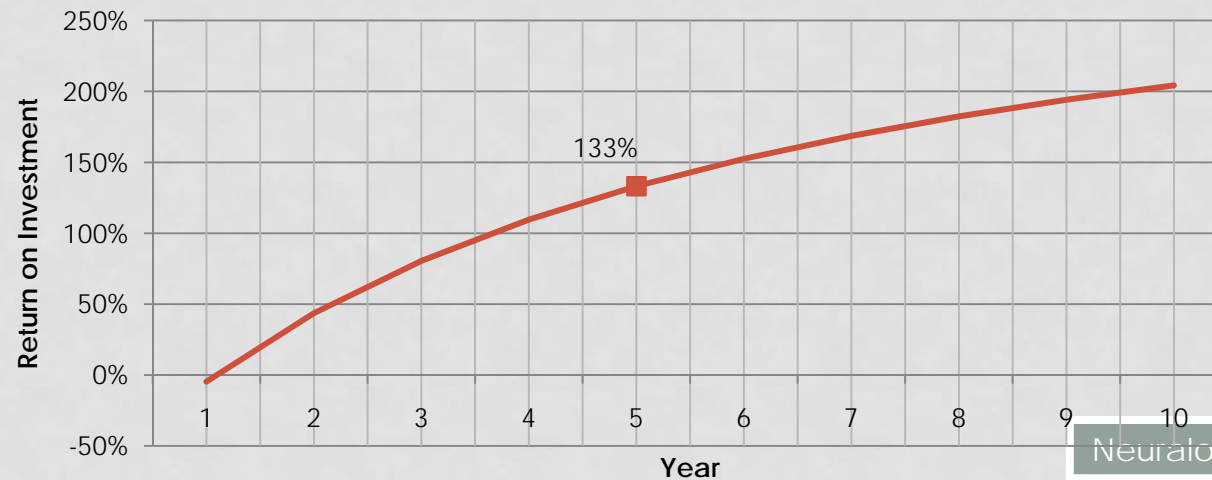


ROI DIFFERENCE IN BUILD VS. BUY FOR COMPANY X

ROI when Building PPDM from Scratch



ROI when Buying PPDM based products



CONCLUSIONS?

- Implementing a master data management system is better than not doing so (duh!)
- ROI can range from 25-130% depending on what you build and what you buy

THANK YOU!

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