Data Warehouse Implementation Checklist

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Data Warehouse Methodology

Introduction

From our Data Warehouse implementaiton practices, we have gathered a detail task list which you can use as checklist for your data warehouse implementation. The methodology is divided into FIVE major phases. Each phase is divided into modules and the modules are further subdivided into tasks. The five phases of are:

- Business Discovery
- Solution Design
- Solution Development
- Implementation
- Review

Data Warehouse Methodology Template Guideline

Business Discovery

- ❑ Identify Business Issues and Metrics
- ❑ Gather industry benchmarks
- ❑ Prepare for Business Discovery
- ❑ Meet with client champion and plan meetings, identify interviewees
- ❑ Schedule kickoff and dates for interviews
- ❑ Send notification of Business Discovery to those involved
- ❑ Conduct kickoff meeting
- ❑ Conduct interviews and capture results
- ❑ Discover problem areas
- ❑ Discover objectives
- ❑ Discover initiatives
- ❑ Gather business metrics and ratios
- ❑ Compare client to industry benchmarks
- ❑ Prioritize problems, objectives and initiatives
- ❑ Review interview results with interviewees to validate and correct
- ❑ Match prioritization with business's current priorities
- ❑ Conduct Workshop with Participants
- ❑ Select business issues from Interview and Prioritization steps.
- ❑ Gain consensus on Business Issues precise definition
- ❑ Determine impact on the involved departments and on the company as a whole
- ❑ Understand information needs for top priorities
- ❑ Identify value of issue resolution to the involved departments and to the company
- ❑ Prioritize the issues according to the needs of the organization
- ❑ Obtain consensus to further study of high priority items by working in affected departments
- ❑ Conduct detailed interviews of affected departments
- ❑ Define business questions and decision making for top priorities
- ❑ Define information that would support these questions and decisions
- ❑ Define history of information needed to address these questions
- ❑ Identify when business questions would be asked
- ❑ Identify person, groups, functions which would initiate the questions
- ❑ Identify the actions which would be taken based on the questions
- ❑ Identify people issues in implementing a solution
- ❑ Identify measures of operational, financial and behavior change
- ❑ Achieve consensus on questions and information needs
- ❑ Identify Required Data Elements with IT Organization
- ❑ Define data elements to answer key business questions
- ❑ Determine data availability from IT
- ❑ Determine data location from IT
- ❑ Investigate data quality
- ❑ Investigate history of data available
- ❑ Investigate alternatives
- ❑ Identify processes and decision made differently due to lack of information
- ❑ Document data availability, quality and alternatives; create elementary data model and mapping
- ❑ Determine system scope to achieve business priorities
- ❑ Determine data base size, technology requirements and costs
- ❑ Determine application scope and development costs
- ❑ Determine training requirements and costs
- ❑ Determine people issues
- ❑ Determine ROI

- ❑ Assign a business value to questions by determining which metrics would be affected
- ❑ Assign a ROI on the major areas addressed
- ❑ Achieve a consensus with players in a major area
- ❑ Present findings to executives
- ❑ Prepare deliverables
- ❑ Prepare presentation
- ❑ Preview presentation with Champion and key players
- ❑ Present findings to executives
- ❑ Obtain feedback and modify deliverables
- ❑ Prepare final deliverables

Solution Design

Architecture Evaluation

- Architecture review
- Determine client's existing architecture
- Determine client's desired architecture and plan to achieve
- Evaluate network technology, capacity and expandability
- Data Administration review
- Review existing data administration architecture
- Inventory relevant production systems data stores
- Investigate data quality, redundancy, ownership
- Determine desired data administration architecture
- Determine DBMS strategy
- Determine Metadata management strategy
- Determine data transformation strategy
- Determine data security strategy
- Determine data access strategy
- Determine change management strategy
- Determine capacity planning strategy
- Determine skill sets needed to implement and manage data management strategy
- Application review
- Review existing application environment
- Determine desired application environment to access data warehouse
- Determine application products and development environment
- Determine skill sets needed to implement and manage applications

Data Warehouse Design

- Architecture review
- Determine client's existing architecture
- Determine client's desired architecture and plan to achieve
- Enterprise Data Architecture Review
- Review existing enterprise data architecture
- Review existing logical data models
- Determine strategy to create enterprise data architecture in context of data warehouse
- Data Administration review
- Review existing data administration architecture
- Inventory relevant production systems data stores
- Investigate data quality, redundancy, ownership
- Determine desired data administration architecture
- Determine DBMS strategy
- Determine Metadata management strategy
- Determine data transformation strategy
- Determine data security strategy
- Determine data access strategy
- Determine change management strategy
- Determine capacity planning strategy
- Determine skill sets needed to implement and manage data management strategy
- Application review
- Review existing application environment
- Determine desired application environment to access data warehouse
- Determine application products and development environment

- Determine skill sets needed to implement and manage applications
- Communications Review
- Review existing communications and network strategy
- Evaluate network technology, capacity and expandability
- Evaluate processes for supporting network
- Determine means of integrating Smart Warehouse into client's network architecture.
- Design Smart Warehouse Technology Components
- Determine Data Base Sizing Requirements
- Determine DASD Requirements
- Determine DB Server Processor Requirements
- Determine networking requirements
- Determine applications development requirements
- Determine middleware software requirements
- Determine client workstation requirements
- Review Training Requirements
- Determine IT Operations Support skills
- Determine IT Networking skills
- Determine Data Administration skills
- Determine Data Base Administration skills
- Determine Application Development skills
- Determine End User skills to utilize technology
- Create Education plan for IT
- Create End User Training and support plan

Logical Data Design

- Examine business questions DSS system is to answer
- Determine data elements needed
- Determine subject areas of data involved
- By subject area:
- Determine primary entities
- Determine common identifiers of those entities
- Describe the data attributes of those identifiers by looking in existing data stores.
- Note discrepancies of the data attributes which occur from redundant sources. Discrepancies will be resolved in Mapping of Legacy Data into DB step.
- Determine the minor entities which are used in describing the major entities.
- Determine the data attributes of those id's of minor entities by looking in existing data stores.
- Determine relationships between entities.
- Describe foreign keys between entities. Describe the data attributes by looking in existing data stores.
- Draw an Entity Relationship diagram.
- Define attributes which describe the primary keys of entities. Define existing data elements which
- serve as attributes as well as define data which would be desirable but doesn't exist within systems currently.
- Determine the data attributes of those attributes by looking at existing data stores.
- Note discrepancies of the data attributes which occur from redundant sources. Discrepancies will be resolved in Mapping of Legacy Data into DB step.
- Document all entities, relationships, attributes and discrepancies of definition.
- Review logical model with subject experts from the business units and IT.
- Present logical model to Data Management area of IT plus IT executives.

Data Mapping

By Subject Area:

- Determine potential primary system sources for entities.
- Determine issues of conflict regarding proper source or integrity between competing systems.
- Determine data files as sources of entities.
- Determine file and data element sources of primary keys for entities. Determine format and domain of
- data source.
- Determine format and domain issues between source and logical model.
- Determine frequency of updates of entities.
- Determine steward of primary keys and entities.
- Determine foreign key sources and format and domain issues between source and logical model.
- Also, determine format and domain issues between source and the entity owning foreign key.
- Determine record counts from source systems and row counts for target data base.
- Determine referential integrity quality and any issues with foreign keys.
- Determine file and data element sources of attributes for entities.
- Determine format and domain issues between source and logical model for attributes.
- Resolve source of data elements when conflicts exist with users and data administration.
- Resolve stewardship conflicts with users and data administration.
- Resolve format and domain conflicts with users and data administration.
- Determine criticality of missing data elements.
- Present data map to Users, IT Data Management and IT Executive Management
- General design of transformation processes.
- Identify source files.
- Design initial load of data.
- Design cyclical loads of data to handle changes, new data, and deletion from source system.
- Determine conversion of formats and domains. Determine edit and validations needed for scrubbing data.
- Determine record counts from source systems and row counts into target data bases.
- Determine merges of data sources.
- Determine splits of data sources.
- Determine and design householding, enrichment and scoring of data requirements.
- Determine frequency of extracts.
- Determine outputs of conversion and extract process which will be inputs to data warehouse.
- Design load processes into target databases.
- Determine validation process for loads to data warehouse.
- Determine update process to Metadata when data warehouse is modified.
- Design review with Data Management and Applications owners of source systems.
- Detail design of transformation processes by module

Physical Data Base Design

By Subject Area:

- Query requirements analysis
- Review business queries and logical data model.
- Convert business queries to SQL against logical data model.
- Review frequency of update requirements from business requirements
- and data mapping results.
- Determine major tables and primary keys of tables.
- Determine format and domain of primary keys.
- Determine characteristics of tables
- Determine foreign keys, formats and referential integrity options.
- Determine format and domain of attributes.
- Determine order of columns.
- Determine row counts and size of tables.
- Determine if logical tables should be combined to reduce joins.
- Determine if logical tables should be split to reduce size, improve loads, improve performance.
- Determine secondary indexes for tables. Determine size of secondary indexes.
- Determine DASD and processor distribution to manage data base.
- Determine how to distribute data base, tables spaces and tables onto DASD and processors.
- Determine how to distribute secondary indices onto DASD and processors.
- Determine views needed for data base
- Determine users of views for security, need to know purposes, and making data definitions more
- comprehensible to users
- Determine views for hiding joins and other SQL complexities
- Determine usage control and tracking processes
- Document Physical Data Base Design
- Define design considerations, explain design choices
- Create Data Definition Language (DDL)
- Design Review with Data Management, Applications, Data Base Admin.
- Design Review with Users.
- Complete documentation with design changes from Design Review

Application Design

- Understand business needs and requirements
- Determine the type of information requested by business users
- Understand user's terminology, approach and sequence for asking questions
- Understand information user needs to ask question - i.e. dimensions
- Determine next questions and actions a user is likely to perform after receiving answer
- Architect application and perform general design of objects and functions
- Determine usage control and tracking processes
- Design means of displaying choices and results to users
- Determine best means of displaying answers to questions
- Determine best ways of presenting options for initiating queries to users
- Design options menu
- Design dimensions options, objects and functions
- Design output display
- Design means to initiate queries based on results of previous queries
- Design data base SQL requests
- Design start up window
- Design logon window and functions
- Design help facility
- Design training and documentation
- Conduct design review with user, DBA and application development
- Create project plan for constructing and testing application
- Understand business questions to be resolved with batch reporting and batch query
- Determine the type of information requested by business questions
- Determine frequency and distribution of reporting requirements
- Design batch reporting system
- Design ad hoc query submission processes
- Design recurring query submission processes
- Design report layouts
- Design result report distribution process
- Design problem resolution process
- Design user training
- Conduct design review with user, DBA and application development
- Create project plan for construction

Solution Development

Data Transformation

- Preparation
- Review detail design specs from Transformation Design step
- Create construction plan
- Create validation testing process, involve owners and users of data
- Obtain access to development environment
- Construct and test modules for the initial loads (per module):
- Construct transformation modules for initial loads
- Unit test of modules
- Create and test load utilities or modules to physical data base
- System test of modules
- Load test data to physical data base
- Run transformation and load on smaller subset of data
- Validate subset of data with owners and users of data
- Load full initial data to physical data base
- Run transformation and load on complete set of data
- Validate complete set of data with owners and users of data
- Construct and test modules of cyclical loads (per module):
- Construct extract and conditioning modules
- Unit test of modules
- Create and test load utilities or modules to physical data base
- Load test data to physical data base
- Run transformation and cyclical load on smaller subset of data
- Validate subset of data with owners and users of data
- Load full initial data to physical data base
- Run transformation and cyclical load on complete set of data
- Validate complete set of data with owners and users of data
- System test of cyclical load modules
- Create procedures to integrate cyclical loads into production systems
- Design procedures for production scheduling system
- Construct production procedures
- Test production procedures
- Turn production procedures over to operations

Database Implementation

- Review design specifications
- Understand Physical Database Design
- Understand Extract and Conditioning Design for Initial and Cyclical Loads
- Create Data Base Objects for testing purposes - Unit and Loads
- Create data base, table and secondary index spaces
- Create tables and access rights
- Create secondary indexes and access rights
- Create users and access rights
- Create views and access rights
- Implement any usage control and tracking processes
- Unit Testing
- Load initial test data for Unit Testing
- Assist resolving query performance issues
- Modify data base design and affected DB objects as necessary
- Test initial loads from Conversion and Extract Systems
- Validate initial loads
- Validate with Metadata

- Assist resolving load process performance issues
- Test cyclical loads from Conversion and Extract Systems
- Validate initial loads
- Validate with Metadata
- Assist resolving load process performance issues
- Assist resolving query performance issues
- Create Data Base Objects for production purposes
- Create data base, table and secondary index spaces
- Create tables and access rights
- Create secondary indexes and access rights
- Create users and access rights
- Create views and access rights
- Load production tables
- Validate initial loads
- Validate with Metadata
- Determine space issues
- Assist resolving load process performance issues
- Assist resolving query performance issues
- Create Data Base Objects for ongoing testing purposes
- Create data base, table and secondary index spaces
- Create tables and access rights
- Create secondary indexes and access rights
- Create users and access rights
- Create views and access rights

Application Development

Create Front End GUI Application

- Understand business questions
- Determine the type of information requested by business questions
- Understand user's terminology, approach and sequence for asking questions
- Understand information user needs to ask question - i.e. dimensions
- Determine next questions and actions a user is likely to perform after receiving answer
- Architect application and perform general design of objects and functions
- Design means of displaying choices and results to users
- Determine best means of displaying answers to questions
- Determine best ways of presenting options for initiating queries to users
- Design options menu
- Design dimensions options, objects and functions
- Design output display
- Design means to initiate queries based on results of previous queries
- Design data base SQL requests
- Design start up window
- Design logon window and functions
- Design help facility
- Design training and documentation
- Conduct design review with user, DBA and application development
- Create project plan for constructing and testing application
- Prepare development environment
- Obtain and install software for development environment
- Obtain test data for unit testing
- Construct and test modules for first view:
- Construct and test start up window
- Construct and test logon window

- Construct and test first view, functions, objects and SQL. Construct any application server modules,
- objects and functions.
- Implement any application specific usage control functions.
- Review first view with users
- Modify first view with user changes
- Construct any application server modules, objects and functions
- Test view against full data base
- Test view on standard client across standard network
- Construct and test help functions for view
- Review with users
- Construct and test additional views - per additional view:
- Construct additional view
- Review view with users
- Modify view with user changes
- Test view against full data base
- Test view on standard client across standard network
- Construct and test help functions for view
- Review with users
- System test with user involvement
- Hand over application to production support
- Provide training to end users

Create Batch Reporting System

- Establish environment
- Establish environment including software and ids and access to data base
- Obtain test data
- Construct batch reporting system
- Construct and test ad hoc query submission processes
- Construct and test recurring query submission processes
- Construct and test result report distribution process
- Test processes against full data base
- Optimize SQL
- Document modules
- System Test
- Integrate into production batch system and scheduler
- Hand over application to production support
- Provide training to end users

Ad Hoc Query Tool Implementation

- Understand business questions
- Determine the type of information requested by business questions
- Understand user's terminology, approach and sequence for asking questions
- Understand information user needs to ask question - i.e. dimensions
- Determine next questions and actions a user is likely to perform after receiving answer
- Understand GUI Query tool chosen by client
- How does tool access Metadata
- How does tool generate SQL
- What type of SQL is generated
- Can users store commonly used queries
- How are results displayed to users
- How does tool communicate with server
- What flexibility exists for tool modification
- Design use of tool
- Determine best means of displaying answers to questions

- Determine best ways of presenting options for initiating queries to users
- Design means to generate SQL requests to server
- Design communications access from tool to server
- Design start up window
- Design logon window and functions
- Design help facility
- Design means to initiate queries based on results of previous queries
- Design training and documentation
- Conduct design review with users, DBA and applications tool support
- Create project plan for constructing and testing tool
- Prepare development environment
- Obtain and install software for development environment
- Obtain test data for unit testing
- Modify and test tool against unit test data
- Construct and test start up of application including start up screen
- Construct and test logon
- Construct and test access to Metadata
- Construct display of query options
- Construct output display
- Test against full data base
- Optimize query performance
- Test view on standard client across standard network
- Construct and test help functions
- Conduct user training
- Transfer support of tool to production support

Solution Implementation

Integrated Implementation/Software Installation

- Plan integration steps
- Hardware/Operating System Implementation
- Install and test Hardware/OS
- Install network connectivity, mainframe attachment and software for communications.
- Test peripheral devices
- DBMS - Install and configure software
- Metadata Manager
- Install and configure software
- Create processes to update software and handle change management.
- Create processes for dealing with problems in software, seeking resolution, and documenting problem management.
- Schedule software to be brought up and down with operations.
- Create processes for DBA and applications developers to interface.
- Extract and Conditioning Utilities
- Install and configure software
- Create processes to update software and handle change management.
- Create processes for dealing with problems in software, seeking resolution, and documenting problem management.
- Schedule software to be brought up and down with operations.
- Create processes for DBA and applications developers to interface.

System Administration Manager

- Install and configure software
- Create processes to update software and handle change management.
- Create processes for dealing with problems in software, seeking resolution, and documenting problem management.
- Schedule software to be brought up and down with operations.
- Create processes for system admin, DBA and applications developers to interface.
- Implement and install any Usage Control and Tracking technology.

Security software

- Install and configure software
- Create processes to update software and handle change management.
- Create processes for dealing with problems in software, seeking resolution, and documenting problem management.
- Schedule software to be brought up and down with operations.
- Create processes for system admin, DBA and applications developers to interface.

Data Management/Operations

- Prepare Environment
- Establish access to system, operating system, id's, etc.
- Establish system administrator and DBA id's and access rights
- Create processes for dealing with problems in DBMS, seeking resolution, and documenting.
- Establish System Administration Processes
- Create process to manage user access to system
- Create processes to detect and resolve hot spots (components like processors or disks which are
- bottlenecks)
- Create processes to detect and resolve automatic restarts
- Create processes to detect and resolve problem components
- Create processes to detect and resolve software problems.
- Create processes to manage and interface with product vendors.
- Create processes to manage and interface with maintenance vendors.
- Create processes to update third party software and handle change management.
- Create processes to update operating system software and handle change management.
- Create processes to perform hardware system maintenance.
- Create processes for job scheduling, taking third party software up and down.
- Create processes to monitor disk storage, processor and peripheral usage.
- Create processes to increase capacity of system.
- Create charge back processes
- Establish Network Management Processes
- Create processes to monitor network usage.
- Create processes to detect and resolve problem communications connections.
- Create or modify processes to expand network capacity.
- Create data base administration procedures
- Create processes to create users, tables, indexes, other DB objects and their access rights
- Create processes to monitor data base size, usage, security and changes.
- Create and implement Usage Control and Tracking tools.
- Create charge back processes
- Create processes to update DBMS software and handle change management.
- Create processes to detect and resolve locking problems
- Create processes to detect the need for DB reorgs and conduct reorgs
- Create processes to handle and resolve loading problems
- Create processes to detect and resolve query problems.
- Backup and Recovery
- Create backup and recovery processes
- Test processes on unit test data
- Test processes on large test data
- Test processes on production data
- Design procedures for production scheduling system
- Construct production procedures
- Test production procedures
- Turn production procedures over to operations
- Hand over DBA functions to client
- Overview DB design and applications accessing
- Hand over update processes for production systems.
- Hand over test systems, review designs and update processes.
- Hand over processes to create users, tables, indexes, other DB objects and their access rights
- Hand over processes to monitor data base size, usage, security and changes.
- Hand over processes to update DBMS software and handle change management.
- Hand over charge back processes
- Hand over processes to detect and resolve locking problems
- Hand over processes to detect the need for DB reorgs and conduct reorgs
- Hand over processes to handle and resolve loading problems
- Hand over processes to detect and resolve query problems.

- Hand over backup and recovery processes.

Integration Test

- Full integration test
- System access from all client types and network types
- Full system access to data base
- Full application access to system
- Determine checklist of items to test and measure. Make assignments.
- Establish process and obtain resources to capture measurements and problems.
- Test functionality - volume loads, logons, query concurrency and complexity
- Volume loads - large table load - Measure performance and integrity
- Run complete cycle of loads - daily, weekly, monthly - Measure performance and integrity
- Execute and measure logons - concurrency and volume
- Query mix - Measure performance and integrity
- Query volume - Measure performance and integrity
- Query concurrency - Measure performance and integrity
- Cycle of loads, backup
- Perform complete cycle of backups
- Perform disaster scenario of losing a table, database, components of system
- Implement recovery processes for different disaster scenarios and recover system.
- Execute monitoring and controls quality process
- Execute validation of data process
- Utilize change management process of DB, OS, HW, 3rd party SW, Application
- Utilize problem resolution process for DB, OS, HW, 3rd party SW, Application

Performance Test

- Full integration test
- System access from all client types and network types
- Full system access to data base
- Full application access to system
- Determine checklist of items to test and measure. Make assignments.
- Establish process and obtain resources to capture measurements and problems.
- Stress test - volume loads, logons, query concurrency and complexity
- Volume loads - large table load within production batch window - Measure performance
- Run complete cycle of loads - daily, weekly, monthly within production batch window - Measure
- performance
- Execute and measure logons - concurrency and volume - Measure performance
- Query mix - Measure performance
- Query volume - Measure performance
- Query concurrency - Measure performance
- Cycle of loads, backup
- Perform complete cycle of backups within batch window - Measure performance
- Perform disaster scenario of losing a table, database, components of system
- Implement recovery processes for different disaster scenarios and recover system.
- Execute monitoring and controls quality process
- Execute validation of data process
- Utilize change management process of DB, OS, HW, 3rd party SW, Application
- Utilize problem resolution process for DB, OS, HW, 3rd party SW, Application

System Test

- Full parallel test
- System access from all client types and network types
- Full system access to data base
- Full application access to system

- Determine how to run parallel and establish times and comparisons.
- Meet with user organization that is going to run on system, set expectation
- Train users using the training process developed for the system.
- Stress test - volume loads, logons, query concurrency and complexity
- Volume loads - large table load within production batch window - Measure performance
- Run complete cycle of loads - daily, weekly, monthly within production batch window - Measure
- performance
- Execute and measure logons - concurrency and volume - Measure performance
- Query mix - Measure performance
- Query volume - Measure performance
- Query concurrency - Measure performance
- Cycle of loads, backup
- Perform complete cycle of backups within batch window - Measure performance
- Perform disaster scenario of losing a table, database, components of system
- Implement recovery processes for different disaster scenarios and recover system.
- Execute monitoring and controls quality process
- Execute validation of data process
- Utilize change management process of DB, OS, HW, 3rd party SW, Application
- Utilize problem resolution process for DB, OS, HW, 3rd party SW, Application
- Execute help desk processes to support users and triage problems.
- Measure integrity of system and data. Measure parallel system comparisons.

Design Reviews

Logical Model Design Review

- ❑ Major entities
- ❑ Primary keys of major entities
- ❑ Relationships between major entities, cardinality
- ❑ Minor entities
- ❑ Primary keys of minor entities
- ❑ Relationships with minor entities, cardinality
- ❑ Dependent, Associative & Recursive tables
- ❑ History tables
- ❑ Deletion rules
- ❑ Attributes of major entities
- ❑ Attributes of minor entities
- ❑ Domain of major entities
- ❑ Domain of minor entities
- ❑ Documentation of current design
- ❑ Recommendation of design changes
- ❑ Presentation of design review

Physical Data Base Design Review

- ❑ Application requirements
- ❑ Load requirements
- ❑ Backup and recovery requirements
- ❑ Map of logical to physical
- ❑ Combination of tables
- ❑ Split of tables
- ❑ Primary key selection
- ❑ Full table scan analysis
- ❑ Join analysis
- ❑ Aggregation analysis
- ❑ Single or minimal row access requirements
- ❑ Index review
- ❑ Load design analysis
- ❑ Backup and recovery analysis
- ❑ DB object access requirements analysis
- ❑ Attribute review
- ❑ Referential integrity analysis
- ❑ Table space and index space design
- ❑ Documentation of current design
- ❑ Recommendation of design changes
- ❑ Document physical data base changes from logical model
- ❑ Presentation of design review

Application Design Review

- ❑ Review application requirements
- ❑ Review physical data base design
- ❑ Understand queries from the business perspective
- ❑ Determine the type of information requested by business questions
- ❑ Understand user's terminology, approach and sequence for asking questions
- ❑ Understand information user needs to ask question - i.e. dimensions
- ❑ Determine next questions and actions a user is likely to perform after receiving answer
- ❑ Review architecture of application and general design of objects and functions
- ❑ Review the means of displaying choices and results to users
- ❑ Review the means of displaying answers to questions
- ❑ Review the means of presenting options for initiating queries to users

- Review the options menu
- Review the dimensions options, objects and functions
- Review the output display
- Review the means to initiate queries based on results of previous queries
- Review the data base SQL requests
- Review the start up window
- Review the logon window and functions
- Review the help facility
- Review the training and documentation
- Review the performance of the application
- Conduct benchmarks, performance and stress tests
- Review the client application issues
- Review the database access issues
- Review the network and gateway issues
- Conduct design review with user, DBA and application development

Data Management/Operations Review

- Review System Administration Processes
- Review process to manage user access to system
- Review processes to detect and resolve hot spots (components like processors or disks which are bottlenecks)
- Review processes to detect and resolve automatic restarts
- Review processes to detect and resolve problem components
- Review processes to detect and resolve software problems.
- Review processes to detect and resolve problem communications connections.
- Create processes to manage and interface with product vendors.
- Review processes to manage and interface with maintenance vendors.
- Review processes to update third party software and handle change management.
- Review processes to update operating system software and handle change management.
- Review processes to perform hardware system maintenance.
- Review processes for job scheduling, taking third party software up and down.
- Review processes to monitor disk storage, processor and peripheral usage.
- Review processes to increase capacity of system.
- Review charge back processes
- Review backup and recovery processes
- Review procedures for production scheduling system
- Review processes for dealing with problems in DBMS, seeking resolution, and documenting.
- Review process for capacity planning.
- Review data base administration procedures
- Review processes to create users, tables, indexes, other DB objects and their access rights
- Review processes to monitor data base size, usage, security and changes.
- Determine usage control and tracking processes
- Review charge back processes
- Review processes to update DBMS software and handle change management.
- Review processes to detect and resolve locking problems
- Review processes to detect the need for DB reorgs and conduct reorgs
- Review processes to handle and resolve loading problems
- Review processes to detect and resolve query problems.
- Review process for creating data base objects and access rights for testing purposes - Unit and Loads
- Review process for modifying data base design and affected DB objects as necessary
- Review process for creating data base objects and access rights for production purposes
- Review process for validating database with Metadata
- Review process for capacity planning.
- Review processes for backup and recovery of database

Application Developing by Prototype Approach

Prototype Design

- Choose application to develop
- Determine function to be performed
- Determine business benefit and actions from answers to questions
- Choose application technology to implement prototype
- Determine data requirements
- Define data elements to answer key business questions
- Determine amount of history needed
- Determine data availability
- Determine data location
- Investigate data quality
- Investigate history of data available
- Investigate alternatives
- Design elementary data model and mapping
- Determine data transformation requirements
- Determine system requirements for prototype
- Determine data base sizing
- Determine processor requirements
- Determine connectivity and network requirements
- Determine client work station requirements
- Plan iterative prototype
- Determine success criteria
- Perform training analysis and determine training requirements
- Plan data extract, conversion and loading
- Plan application implementation
- Plan technology implementation
- Plan resource and time requirements
- Propose prototype
- Prepare deliverables
- Prepare presentation
- Preview presentation with Champion and key players
- Present to executives
- Obtain feedback and modify deliverables
- Prepare final deliverables

Pilot Development & Implementation

- Project kickoff
- Meet with IT and client champions, plan project and plan kickoff
- Schedule kickoff and notify attendees
- Conduct kickoff
- Technology implementation and integration
- Site planning and preparation
- Hardware delivery and installation plan
- Install hardware and burn in test
- Install software on servers, hosts and clients
- Connect server to hosts and network
- Test host and network software interfaces to server
- Create and document operations support procedures
- Training
- Conduct training for data base administration
- Conduct training for system administration
- Conduct training for application development
- Conduct training for operations support

- Application development
- Implement development environment
- Create logon screens
- Create input screens
- Create output display screens
- Create output reports
- Review application with users
- Create SQL
- Test application against small data base
- Review application results with users
- Test application against large data base
- Review application results with users
- Document application
- Data base design and implementation
- Create DDL for small test data base
- Create access rights for small test data base
- Load small test data base
- Assist application development with SQL and data base tuning
- Create DDL for large data base
- Create access rights for large data base
- Assist with load of large data base
- Assist application development with SQL and data base tuning
- Create backup and recovery routines for data base
- Create and document data base support procedures
- Data extraction, conditioning and loading
- Extract data from existing source systems
- Write programs or use utilities to modify data prior to loading in data base
- Write scripts for utilities or programs loading data into data base
- Load small amount of data into data base
- Check validity with users
- Load large amount of data into data base
- Check validity with users
- Load entire data base
- Create extraction routines for updates to data base
- Write scripts for loading updates into data base
- Load updates into data base and test validity
- Create production jobs to update data base regularly
- Document extraction, condition and load system
- Solution demonstration
- Plan user demonstration and training
- Demonstrate and train users
- Support users
- Verification of business value
- Document prototype business value and make recommendations
- Prepare executive presentation
- Present to executives
- Prototype turnover
- Turnover system to operations support
- Turnover data base to DB support
- Turnover application to application support
- Turnover extract, condition and load to data administration support