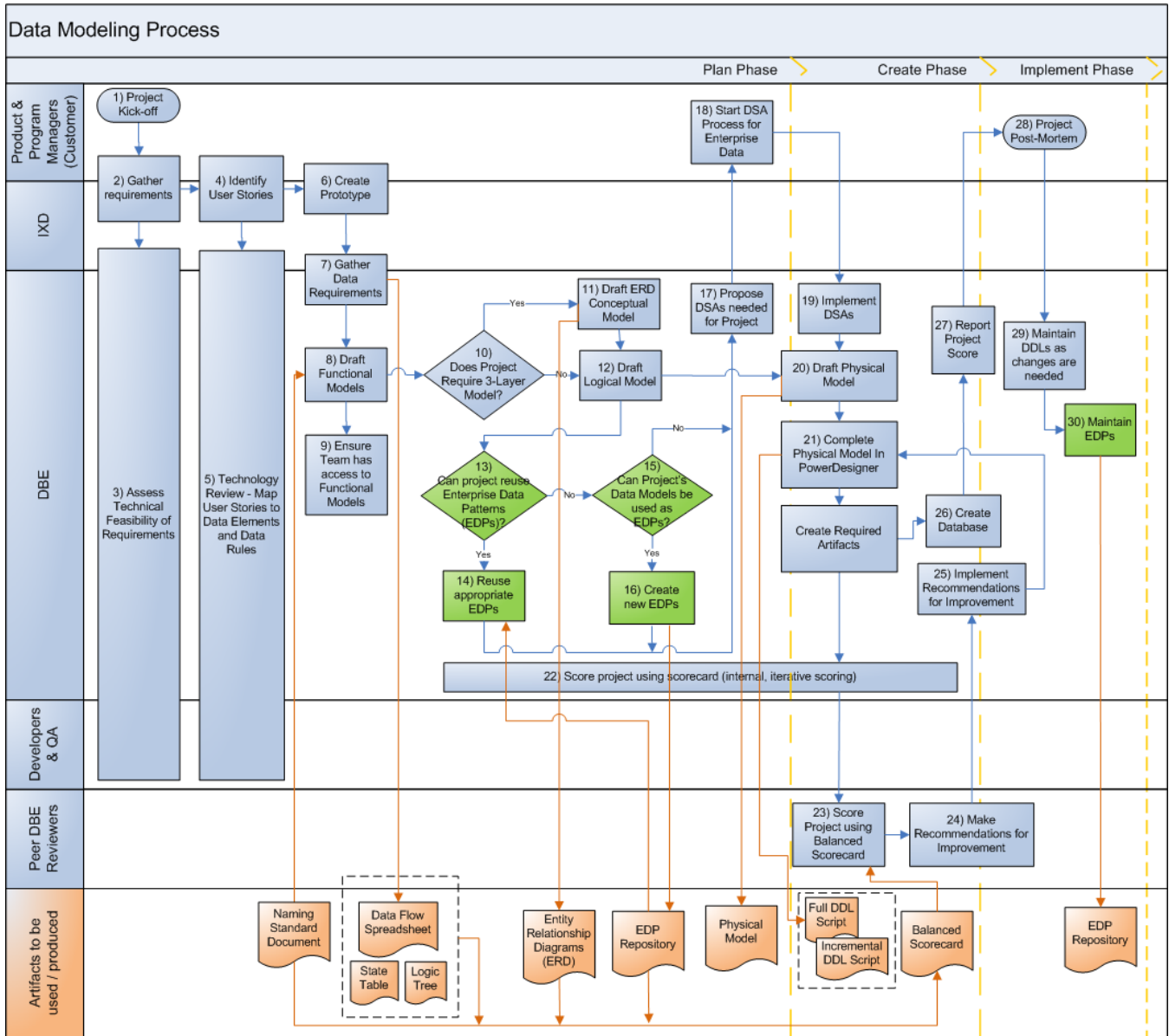


Data Modeling Process

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Process:

🔄 Iterative step: This symbol indicates the step may need to be performed several times during the life of the project as new requirements are discovered or change

● DBE works with the Information Center Team: Green steps indicate that the DBE consults with the Information Center Team to find appropriate EDPs.

1. Project Kick-Off Meeting: At the beginning of every project, the Program Managers assemble the project team and the Product Manager to introduce the project, define the project objectives, and define the team members' roles.

2. Gather Requirements🔗: The IXD meets with Product Managers and other stakeholders to gather, refine, and document the project requirements. Requirements should be gathered not only from the interaction point of view, but also from the data requirements one.
3. Assess Technical Feasibility of Requirements🔗: All the disciplines of the Development team review requirements and assess their technical feasibility.
4. Identify User Stories🔗: IXD translates requirements into user stories.
5. Technology Review - Map User Stories to Data Elements and Data Rules🔗: The Development team extracts from the user stories and discusses the high level design of data elements and data rules.
6. Create Prototype🔗: IXD creates and publishes prototypes, reviews prototypes with stakeholders, communicates changes to Development team.
7. Gather Data Requirements🔗: DBE translates specific user stories and prototypes into data requirements.
8. Draft Functional Models🔗: DBE uses requirements, user stories and other documentation available (such as the **Naming Standard Document**) to draft functional models. Several types of artifacts can be produced for these functional models. The DBE decides what artifacts to produce to best communicate the data model. (For examples see: **Entity Relationship Diagrams (ERD)**, **Requirements document**, **Dataflow**, **Logic tree**, **workflows**, **video-stories**.)
9. Ensure Team has access to functional models.
10. Does project require 3-layer model? DBE assesses the size, complexity of the project and determines if the project needs a conceptual data model. Most projects should only need 2 layers: Logical and Physical data models.
11. Draft ERD Conceptual Model🔗: Large, complex projects will need a Conceptual data model. (See an example here for a **Conceptual Data Model**.)
12. Draft Logical Model🔗: All projects require a Logical Data Model. This will be one of the artifacts evaluated with the Balanced Scorecard. (See an example here for a **Logical Data Model**.)
13. Can project reuse Enterprise Data Objects (EDOs)🔗 ●: Using the Logical Data Model, the DBE should be able to identify if the project can reuse Enterprise Data Objects found in the EDO Repository.
14. Reuse appropriate EDOs🔗 ●: The EDOs Repository contains all the EDOs, descriptions, models, access methods needed to reuse these objects.
15. Can project's data models be used as EDOs🔗 ●: Using the Logical Data Model, the DBE should be able to identify if the project can contribute new EDOs to the EDO Repository.
16. Create new EDOs🔗 ●: DBE working together with the Enterprise Data Architect documents new EDOs into the EDO Repository. The Information Governance Manager works with the DBE, Enterprise Data Architect, and Data Steward to describe the EDO, model it appropriately, and design a comprehensive method of access for this EDO.
17. Propose DSAs needed for project🔗: The DBE discusses with the Program Manager the necessary DSA (Data Sharing Agreements) to access EDOs and other data from other sources. It is important to start the DSA process as soon as possible to avoid the project being delayed in the implementation of these DSAs.
18. Start DSA process for enterprise data: The Program Manager works with the Information Governance Manager to start the necessary DSAs.
19. Implement DSAs: The DBE can work with the MDM team and with the DBEs assigned to the granting applications to gain access to necessary enterprise information. The DBE is responsible to correctly implement the DSAs as agreed. If more or different information is needed, the DBE should inform the Program Manager to amend DSAs as necessary.
20. Draft Physical Model🔗: Towards the end of the Plan Phase and during the Create Phase of the project, the DBE starts

drafting the project's Physical Model. This is another required artifact for scoring the project.

21. Complete Functional Model in PowerDesigner!❗: ****How do DBEs do this? What are the real artifacts? Do we have examples of them? How do they save these in PowerDesigner?***** Save as a local model and then upload to the repository.
22. Score project using Scorecard (internal, iterative scoring)!❗: Throughout the Plan and Create Phases, the DBE informally scores the project's data modeling using the criteria of the Balanced Scorecard. This way, the DBE can prepare all the necessary artifacts for the peer review and scoring. ****We should link the scorecard we will use here****
23. Score project using Balanced Scorecard: The DBE presents the data model artifacts to a small group of peer DBEs including the project's DBE's Manager for scoring using the Balanced Scorecard. If the project receives a score below XX, the project should be reevaluated after the DBE implements recommendations for improvement. ****What forces this peer review? When does this happen exactly? How do we make the time for this?*****.
24. Make recommendations for improvement: The group that scores the project makes recommendations for improvement to the DBE focusing on the following issues:
 - a. How to improve data model
 - b. How to improve documentation
 - c. How to improve reusability of existing EDOs
 - d. How to improve creation of new EDOs.
25. Implement recommendations for improvement!❗: The DBE is responsible to implement recommendations for improvement, especially if the project received a score below XX. After implementing these recommendations, the DBE could resubmit the project for rescoreing.
26. Create database: During the Create Phase, the DBE creates the database using the Full DLL created as part of the Functional Model.
27. Report project score: The DBE reports the project's score to the Program Manager before the Project Post-Mortem meeting.
28. Project Post-mortem: The Program Manager conducts the Project Post-Mortem meeting. As part of this meeting, the data model, artifacts, and score are reviewed by the development team.
29. Maintain DDLs as changes are needed!❗: During the Implementation and Maintenance Phase of the project, the data structures may change. These changes need to be reflected in the DDLs and other data modeling artifacts in order to maintain the current data model.
30. Maintain EDOs!❗ ●: If changes to the data structures of the project affect the structures of EDOs contributed from the project to the EDO Repository, the DBE .

Defining Roles:

Product & Program Managers (Customer)

The business contact for the requesting application; should be a party with a vested interest in obtaining the data and a representative of the project team from the requesting organization; should NOT be an ICS technical representative. This person also performs most of the drafting and processing behind Data Sharing Agreements.

Interaction Designer (IXD)

ICS Manager responsible for documenting and monitoring sharing of data across departments and assuring that best practices are followed. This person acts as a broker between the Requestor and requesting Data Steward, facilitating the exchange of information and helping each party meet their needs within IT policies and principles for information governance.

Database Engineer (DBE)

The person, designated from within the granting application's department, responsible for ensuring proper access and use of the application's data.

Developers

The person, designated from within the granting application's department, responsible for ensuring proper access and use of the application's data.

Quality Assurance (QA Testers)

The person, designated from within the granting application's department, responsible for ensuring proper access and use of the application's data.

Peer DBE Reviewers

The person, designated from within the granting application's department, responsible for ensuring proper access and use of the application's data.