Explainer: What Are Linked Dimensions?

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Linked Dimensions are denoted by a chain link icon (🔗) next to the dimension name in the **Modeler** tab:

By linking a dimension, it can appear in multiple data models simultaneously. In other words, the dimension exists once within your Vena environment but is associated with several different data models.

Why link a dimension?

Vena environments often contain multiple data models tailored to specific functions, such as operational expenses and personnel costs. These models may share common dimensions like Entity, which outlines company divisions or departments.

Maintaining identical Entity dimensions across multiple models can be time-consuming due to manual updates. This manual work is prone to errors, causing inconsistencies between models.

Linking dimensions eliminates this issue by synchronizing changes across all linked models. Any modification—such as adding, renaming or deleting members—automatically updates the dimension across all models, ensuring consistency and saving time.

Are there any constraints to linking dimensions?

There are a few notes and limitations when utilizing linked dimensions:

- **Once dimensions are linked, they cannot be unlinked.** The only way to revert a linked dimension is to delete all but one of the linked data models. This reverts the dimension to a standalone state but also results in data loss from the deleted models. Therefore, linking a

dimension should be considered a permanent action.

- **You cannot "unlink" a dimension by deleting it and replacing it with a copy.** Deleting a linked dimension will destroy all intersection data in that data model. If you were to do this, and then re-add the dimension, all historical data will need to be re-uploaded to the data model.

- **Linked dimensions cannot have different granularity between data models.** Linked dimensions are always identical, meaning they have identical member hierarchies across the models in which they are linked.

- **Hierarchy changes to the linked dimension in one data model affect all the data models with which it is linked.** Ensure Modelers within your Vena environment are aware of any linked dimensions and understand that changes to them affect multiple data models.

- **Linking a dimension affects all linked data models.** When you link a dimension, it becomes connected to **all linked** data models immediately. Ensure the "linked from" data model is correct, as this action also applies to any other linked data models.

- **Linked dimensions respect Application Permissions but may seem otherwise due to linking mechanics.** Only users with specific permissions can modify a data model and its dimensions. However, if a user can modify all dimensions in a model with a linked dimension, or the linked dimension itself, changes will reflect in other models that include the linked dimension, even ones without explicit permissions.

  A user can indirectly modify a data model via the linked dimension. This is not a permission gap but rather an effect of linking. You can set permissions for linked dimensions to allow modifications by certain users while keeping them read-only for others.

- **Deleting a data model with linked dimensions does not affect other models.** Linked dimensions remain after deletion, but if the deleted model shared dimensions exclusively with one other model, the linked dimension icon will vanish from that remaining model.

- **Deleting a data model with linked dimensions does not affect other models.** Normal dimensions and members are deleted, but linked dimensions remain intact in other models.

- **Proceed with caution when running ETL jobs concurrently from multiple data models with linked dimensions**. Running these jobs at the same time can cause calculation errors and data conflicts.

How do I link a dimension?

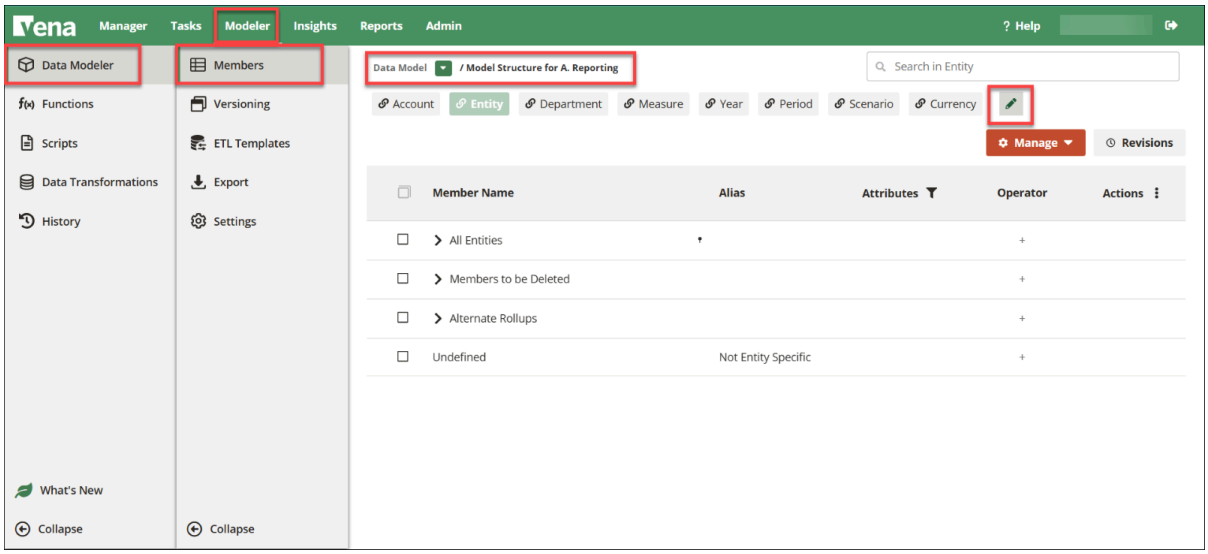
Warning

Linking dimensions cannot be reversed without data loss. Ensure you've read the notes in the previous section before continuing to prevent significant negative effects on your

data models.

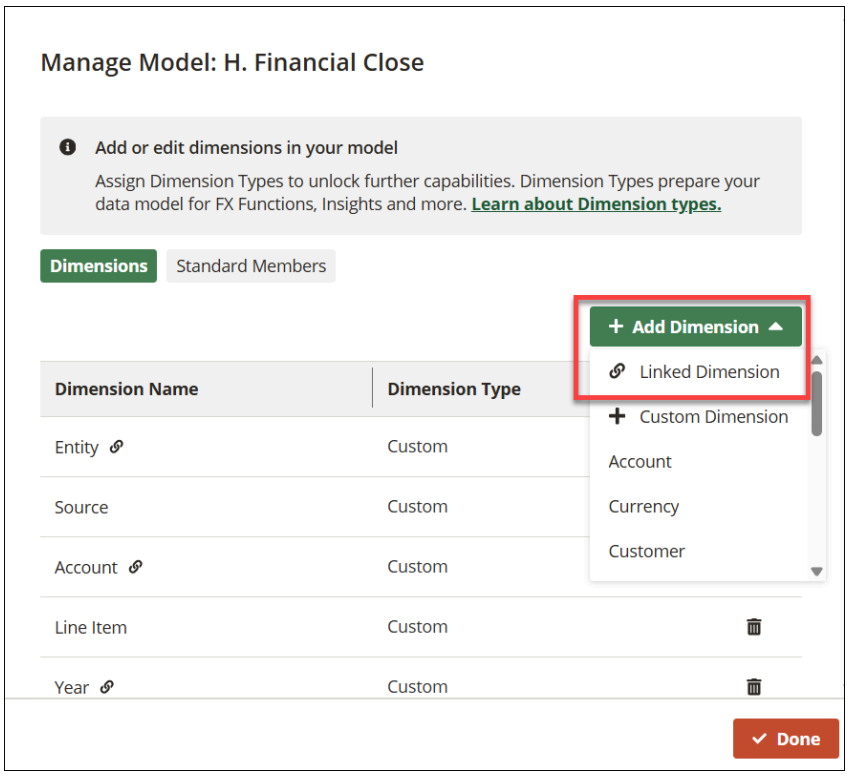
It is strongly recommended that you only link dimensions when setting up a new data model. Linking a dimension with an existing data model is functionally identical to adding a new dimension, in that doing so will break all previously mapped templates attached to that data model. This is because every dimension in a data model must be mapped in the Page, Row or Column mappings for a template to function. When you link a new dimension, you must update mappings for all affected templates, as well as any channels that have the data model as a source or destination.

1. Navigate to the **Modeler** tab, then select **Data Modeler > Members.**
2. Choose a **data model** from the drop-down menu, then select the **pencil icon** ( )to open the *Dimensions* sidebar.



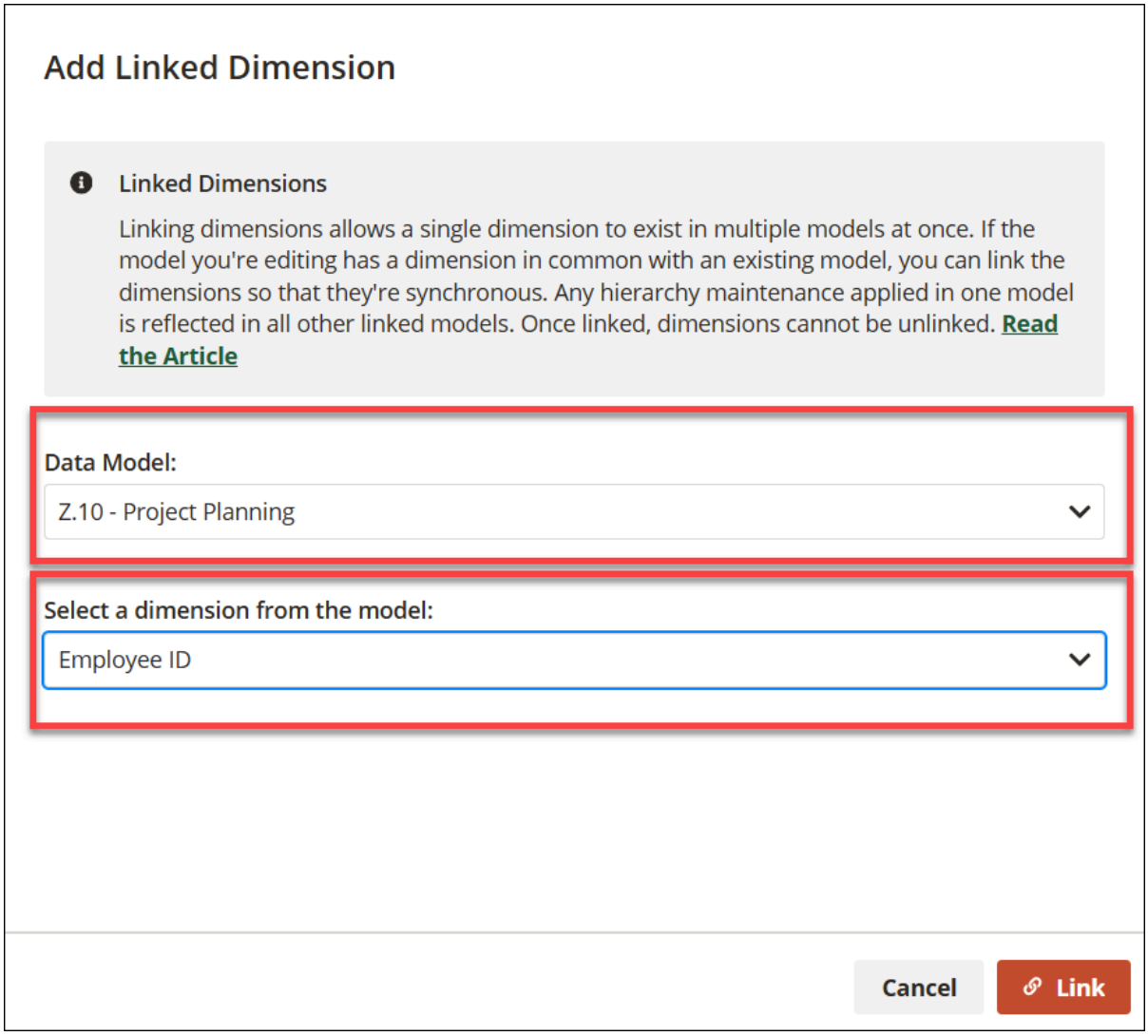
3. Select **+ Add Dimension** to open the drop-down menu.

4. Select **Link Dimension**.

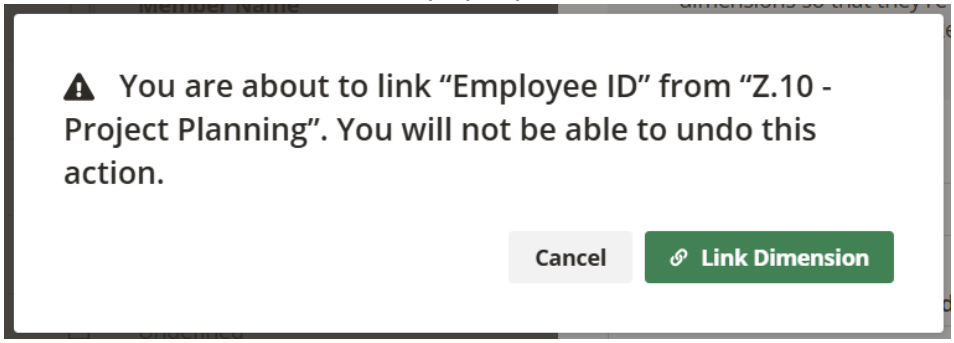


5. Select a **data model**, then select the **dimension** that you wish to link to your model.

   If you have existing data in the data model that you are linking a dimension to, Vena will automatically extend the model to the 'Undefined' member of the new dimension. This is necessary because an intersection must reference each dimension that exists in the data model. When linking a new dimension, existing data within intersections must also be attributed to a member within the newly linked dimension.



6. Select **Link**.
7. Select **Link Dimension** in the pop-up to confirm.



8. Your newly linked dimension will now be listed in the Dimensions section for the selected data model, marked with a link symbol ( ) .

Which dimensions are suitable for linking?

Link dimensions only when appropriate. Suitable ones often include Accounts, Entity and Year, which are common in reports across models.

For example, link the Department dimension in Financial and Workforce data models to synchronize department codes. Similarly, linking the Product dimension across sales and inventory

models ensures consistency in product updates.

Aside from being applicable to multiple data models, dimensions suitable for linking typically also have the following characteristics:

- **No variability in structure between data models:** Linked dimensions must be identical in all data models. They work best for dimensions that naturally stay the same over time. For example, an *Entity* dimension will usually consist of the same entities, such as *1 - Canada* and *2 - USA*, regardless of the data model. If a dimension is likely to need specific changes for different models in the future, it is not suitable for linking because it cannot be unlinked.
- **Tendency to require hierarchy changes:** Hierarchy changes refer to modifications in the structure or levels within a dimension, such as adding new departments or changing department names. Linked dimensions are useful if such adjustments are needed because the change only needs to be made once, and it will automatically apply to all data models that use the linked dimension. However, dimensions that rarely or never require changes, such as a *Period* dimension (e.g., months of the year), may not benefit from being linked.

In all cases, you should carefully consider the potential downsides before linking a dimension, remembering that the process is irreversible.