dun & bradstreet

Master Data:

Implementing Dun & Bradstreet Hierarchies and Custom Hierarchy Views

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MASTER DATA KNOWLEDGE SERIES
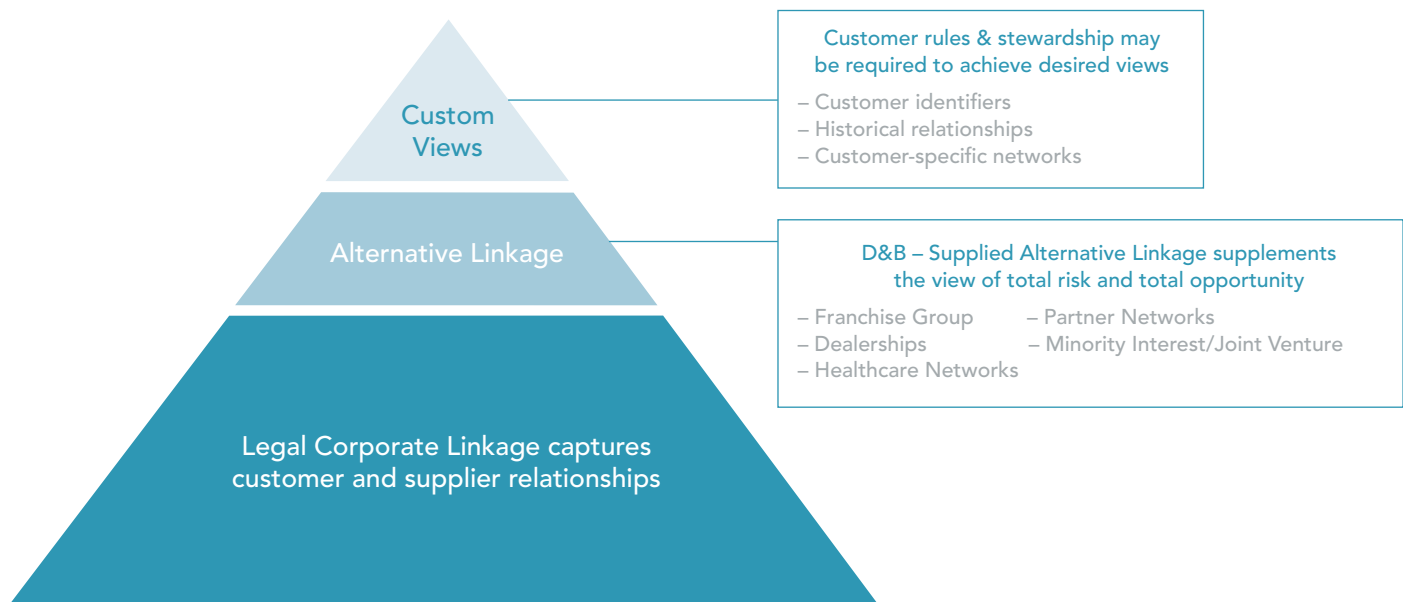
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Hierarchy Implementations

PURPOSE OF DOCUMENT

Implementing hierarchies is one of the greatest benefits in the establishment of Master Data. It is also one of the most difficult components to design, institute, govern and maintain. The implementation of hierarchies can often times, make or break the use and ultimate value of Master Data so ensuring that hierarchies are implemented thoughtfully and strategically is critical.

This document was created to provide a guide for customer hierarchy implementation. It was developed by Dun & Bradstreet's Best Practice Consultants for use by IT, BI, Business Unit Operations and Strategists and Master Data Implementation Consultants.

This methodology uses Dun & Bradstreet created and maintained hierarchies as its foundation with additional guidance for individual business required views layered on top. Using Dun & Bradstreet hierarchies as a foundation provides a third party structure that should be considered as a source of truth. It provides the ability to cross walk between all business views using Dun & Bradstreet legal as the base and provides a foundational structure to always be available to roll back to if business unit hierarchy creation, governance or maintenance gets out of hand. Dun & Bradstreet invests more than one million dollars every business day in maintenance and enhancements of our database of DUNS numbered entities. Dun & Bradstreet linkage relationships are updated 200,000 times per day. Using Dun & Bradstreet hierarchies as your foundation provides your Master Data program with all the benefits of Dun & Bradstreet's resources and infrastructure.

Custom Views

Customer rules & stewardship may be required to achieve desired views
– Customer identifiers
– Historical relationships
– Customer-specific networks

Alternative Linkage

D&B – Supplied Alternative Linkage supplements the view of total risk and total opportunity
– Franchise Group   – Partner Networks
– Dealerships   – Minority Interest/Joint Venture
– Healthcare Networks

Legal Corporate Linkage captures customer and supplier relationships

DUN & BRADSTREET HIERARCHY OVERVIEW

This guide provides a step by step methodology for implementing corporate hierarchies. Some of the information provided here in regarding Dun & Bradstreet hierarchies and *Dun & Bradstreet processes was taken from Dun & Bradstreet's Guide to Working with Family Trees.*

For purposes of this document, linkage, in general terms, is the relationship between different active business entities or specific sites within a corporate family. Linkage occurs in Dun & Bradstreet's database when one business location has financial & legal responsibility for another business location. The percentage of financial and legal responsibility determines the type of linkage relationship.

Not all records in Dun & Bradstreet's database are linked. More than 19.7million active records in Dun & Bradstreet's global database are legally linked as part of a corporate hierarchy and 3 million records are alternatively linked. The remaining records in our global database are categorized as standalone businesses.

Dun & Bradstreet has no limit to the depth and breadth of our family trees, but most families are small in size. The deepest tree within a family at last review was 21 levels.

Legal Traditional Corporate Linkage - for those with majority ownership (> 50% of stock), there are two types of corporate legal linkage relationships in Dun & Bradstreet's database:

– Branch / Division to Headquarter linkage
– Subsidiary to Parent linkage

Dun & Bradstreet presents legal traditional linkage in local databases and full family presentation within our global WorldBase file for active records. Corporate Legal linkage can exist for commercial entities, governments, and non-profit organizations regardless of size. *However, linkage is not displayed on out of business records. The record must be active for any linkage status.*

Alternative Linkages - Those relationships outside of majority ownership are available in a separate database. These relationships typically occur when the affiliated company has no legal obligation for the debts of the other company. Examples of these types of relationships include:

– Franchises, agents, dealers, associations and healthcare networks
– Minority ownership where one corporation owns minority interest in another (< 50%)
– Joint ventures, where there is a 50/50 split in the ownership.

Dun & Bradstreet captures these alternative relationships in a separate linkage file called Alternative Linkages.

If creation of custom views is expected adding the Alternative Linkages file to your process is highly recommended. Often times, business users will create custom views that are actually available via Dun & Bradstreet's Alternative Linkages database.

ASSUMPTIONS

This document focuses on the implementation of corporate hierarchies within a Master Data implementation. Some assumptions are implicit in ensuring the effective implementation of the methodology.

They are:

1. For the purposes of understanding hierarchy implementation best demonstrated practices, we anticipate that all source data is at the highest data quality level possible in order to match as many source records as possible to Dun & Bradstreet records. This will ensure the most complete visibility into corporate linkage

2. For the purposes of understanding hierarchy implementation BDP's, we anticipate that the matching to Dun & Bradstreet records has been optimized.

3. It is understood that all source data which represents an asset, a person, or a combination of people at the same address line, *will not get assigned a DUNS number* and will therefore not be included as part of a corporate linkage implementation.

ESTABLISH YOUR FOUNDATION

Understand your Source Data

– What does it represent? In order to obtain Dun & Bradstreet's foundational hierarchy where applicable, the data must match to a Dun & Bradstreet record and it must represent a business location.

– To ensure the best potential for matching, the quality of the data (source, creation process) should be:

   ◦ **Accurate** – from the highest and best sources of data available

   ◦ **Complete** – as many of the fields on the input layout as possible including company name, address and phone; and also the fields should be populated as completely as possible and its content should be included where it should be.

   ◦ **Timely** – as current as possible

Each source, often times, has varying degrees of quality. Establishing a baseline for source data quality will be important to creating your foundation for linkage.

Understanding Dun & Bradstreet data

DUNS Numbers are assigned to the lowest possible organizational level, i.e. business locations with a unique, separate and distinct operation. Only Dun & Bradstreet assigns DUNS Numbers which helps ensure accuracy, consistency, timeliness and cross-border consistency of information. We follow rigorous rules for assignment and maintenance. Prior to assignment, there is validation from multiple sources. Once assigned it will not be re-issued or re-assigned. The DUNS Number stays with a business throughout the duration of its life cycle, including name and address changes, changes in corporate structure and even bankruptcy.

– Dun & Bradstreet Match reference files contain Active & Inactive company records and are contained within Dun & Bradstreet's Match Reference Database

– Dun & Bradstreet linkage (where available) is only provided to matched and DUNS Numbered records. Records submitted for matching which have the core matching elements of name, address including number, street, city, state/province, country, postal code and phone will have the maximum matching potential.

Associate your Source data with Dun & Bradstreet data (Match)

Best Practice: Use Dun & Bradstreet proprietary matching capabilities to associate (match) your source data to Dun & Bradstreet data. Dun & Bradstreet matching capabilities will provide the best opportunity to match the maximum amount of records.

Best Practice: Match Tie Breaking

If the match option you select provides you with multiple candidates and when match candidates have the same confidence level:

*– Select the candidate with the **highest level** on the family tree*

*– Ensure the candidate selected **is not an OOB (out of business) record** (OOB records do not have hierarchy information)*

UNDERSTAND DUN & BRADSTREET HIERARCHIES

Classifications of Dun & Bradstreet Corporate Legal Linkage

Legal Traditional Corporate Linkage has seven classifications of businesses within Dun & Bradstreet's Corporate Linkage Structure. Linkage terms and definitions are:

Headquarters

A headquarters is a business establishment that has branches or divisions reporting to it, and is financially responsible for those branches or divisions. If the headquarters has more than 50% of capital stock owned by another corporation, it also will be a subsidiary. If it owns more than 50% of capital stock of another corporation, then it is also a parent.

Branch (or Division)

A branch (or division) is a secondary location of its headquarters. It is not a separate corporation, has no legal responsibility for its debts, even though bills may be paid from the branch location. It will usually have the same legal business name as its headquarters, but can carry out a specific operation related to the headquarters and can even have its own trade style name. It is possible for branches to also be located at the same address as the headquarters.

Subsidiary

A subsidiary is a corporation whose capital stock is more than 50% owned by another corporation and will have a different legal business name than its Parent. A subsidiary may have branches and/or subsidiaries of its own. If it does, then its DUNS Number appears in the headquarter/parent DUNS Number field of its children and has a headquarter code assigned to it.

Single Location Subsidiary

A single location subsidiary has a parent who owns >50% of its capital stock, however, it does not have branches or subsidiaries reporting to it. As such, it does not have a headquarters code. Note: A Single Location Subsidiary is not the same as a standalone business which is titled "single location" and which is not part of a corporate family.

Parent

A parent is a corporation that owns more than 50% of another corporation's capital stock. The parent company can also be a subsidiary of another corporation. If the parent also has branches, then it is a headquarters as well as being a parent company.

Domestic Ultimate

The DUNS Number for the domestic ultimate is the highest family member in the same country as this business entity as you walk up the 'limb' or "arm" of the tree. A company may be its own domestic ultimate.

Global Ultimate

The Global Ultimate is the top most responsible entity within the global corporate hierarchy. The Global Ultimate may have branches and/or subsidiaries reporting directly or indirectly to it.

LEVERAGE DUN & BRADSTREET CORPORATE LEGAL LINKAGE DATA

Three levels of Dun & Bradstreet Corporate Legal Linkage are available for all linked site records via all delivery methods and within all Dun & Bradstreet products. In addition to the DUNS provided for each linked site record, up to three additional DUNS Numbers showing the roll up of its corporate ownership at three distinct levels may be provided.

1. **Site DUNS Number:** The DUNS Number that represents that specific entity / location.

2. **Parent or Headquarter DUNS:** The DUNS Number that represents the immediate entity above the site DUNS.

3. **Domestic Ultimate DUNS:** The DUNS Number that represents the highest member of the tree *within the same country as the site DUNS* as you walk up that arm of the tree.

4. **Global Ultimate DUNS:** The DUNS Number that represents the highest member of the entire family tree.

Take note that:

– A branch record carries its own DUNS Number (site), that of its headquarters, that of its domestic ultimate, and that of its global ultimate.

– The Parent / Headquarter DUNS can be a shared field in certain Dun & Bradstreet layouts. There is no "parent indicator" like there is a subsidiary indicator. As such, you need to leverage the status and subsidiary code (detailed in the next section) together to understand if the DUNS Number in this field is for a Headquarter or a Parent relationship to the site DUNS Number.

– A subsidiary carries its own DUNS Number (site), that of its parent, that of its domestic ultimate, and that of its global ultimate.

– The domestic ultimate is the highest member of the hierarchy in a specific country.

– The global ultimate record is at the very top of the global corporate hierarchy.

For most master data implementations, enabling access to the three standard levels of corporate legal linkage is all that is necessary.

TYPE OF LINKED SITE RECORD AND PLACEMENT WITHIN THE CORPORATE FAMILY TREE

Each Dun & Bradstreet linked site record carries a set of linkage elements which help to identify the type of linkage structure the site is, as well as its relationship to other records in the corporate hierarchy. These linkage implementation elements will help define the business entity and, if it is a member of a corporate family, its status within the corporate structure. Depending on your access method to Dun & Bradstreet data, you may receive all or some of the key linkage elements.

These key elements used to construct Dun & Bradstreet linkage are the Status Code, Subsidiary Code, Hierarchy Code and Global Ultimate DUNS Number.

The *status code* is a one-digit field which identifies a record as:

- Single Location = 0
- Headquarters = 1 (Note: there is no Parent Code)
- Branch = 2

– The *subsidiary code* is a one-digit field which identifies the record as:

- Subsidiary = 3
- Non-Subsidiary = 0

– The *hierarchy code* is a two-digit field which determines the record's relative position in a corporate hierarchy by indicating its relationship to other records. It combines the status code and the subsidiary code. The hierarchy code functions in the following way:

- Global Ultimates have a hierarchy code of *"01"*.
- Subsidiaries have a hierarchy code of *one greater* than their parents'.
- Branches have a hierarchy code equal to their headquarters'

Below is a table combining these codes:

Status Code	Subsidiary Indicator	Comments
Single = 0	Not a Sub = 0	Is a standalone entity. Can also be known as single location / non-subsidiary. No linkage upward or downward.
Single = 0	Is a Sub = 3	Is a single site subsidiary. No downward linkage, but stock is held upward by a parent.
Headquarter = 1	Not a Sub = 0	This is the Global Ult. There is no linkage upward. Linkage downward can be either branches or subsidiaries.
Headquarter = 1	Is a Sub = 3	This is a Headquarters with either branches or subsidiaries underneath. It is also a subsidiary so reports upward to another company.
Branch = 2	Not a Sub = 0	Branches are not subsidiaries. Subsidiary indicator has to be = 0.
Branch = 2	Is a Sub = 3	This scenario cannot happen. A branch cannot be flagged as a subsidiary.

Company Location Type may also represent the Hierarchy Code and will be provided as a string shown as Single Location (0), Headquarters (1), Branch (2), Branch/Division (4), and Subsidiary (5).

Dun & Bradstreet's *Dias Code* stands for DUNS Integrated Assigned Sequence. It is a 9 digit number assigned to every subject that is a member of a traditionally linked family tree. This number is used to link family members together by sequencing a file according to the ultimate parent name and family sequence within each group. This is a derived code that is not permanently assigned and changes when linkage is added, deleted or modified in the Dun & Bradstreet WorldBase file.

The Dias Codes are assigned sequentially based upon the following rules:

1. The Ultimate is always listed first.

2. Branches will list directly below their headquarters by name within state within country.

3. Subsidiaries will list directly below their parents and are sorted alphabetically by business name.

4. In the case where a parent / headquarter has both branches and subsidiaries reporting to it, the branches will list first followed by the subsidiaries.

   – Branches will be sorted in geographical order.

   – Subsidiary / headquarters will be sorted alphabetically by company name within each level.

5. Orphans (cases which do not point to anything), are assigned a Dias code of all 9's and will appear last in the file. Orphan records are typically small (less than 10 records) in number each month.

6. In the below sample tree, the Dias Code is a 9-digit number displayed in bold. (Note – this is not a Dun & Bradstreet DUNS® Number which is also 9 bytes.)

Below is a sample tree with DIAS Codes.
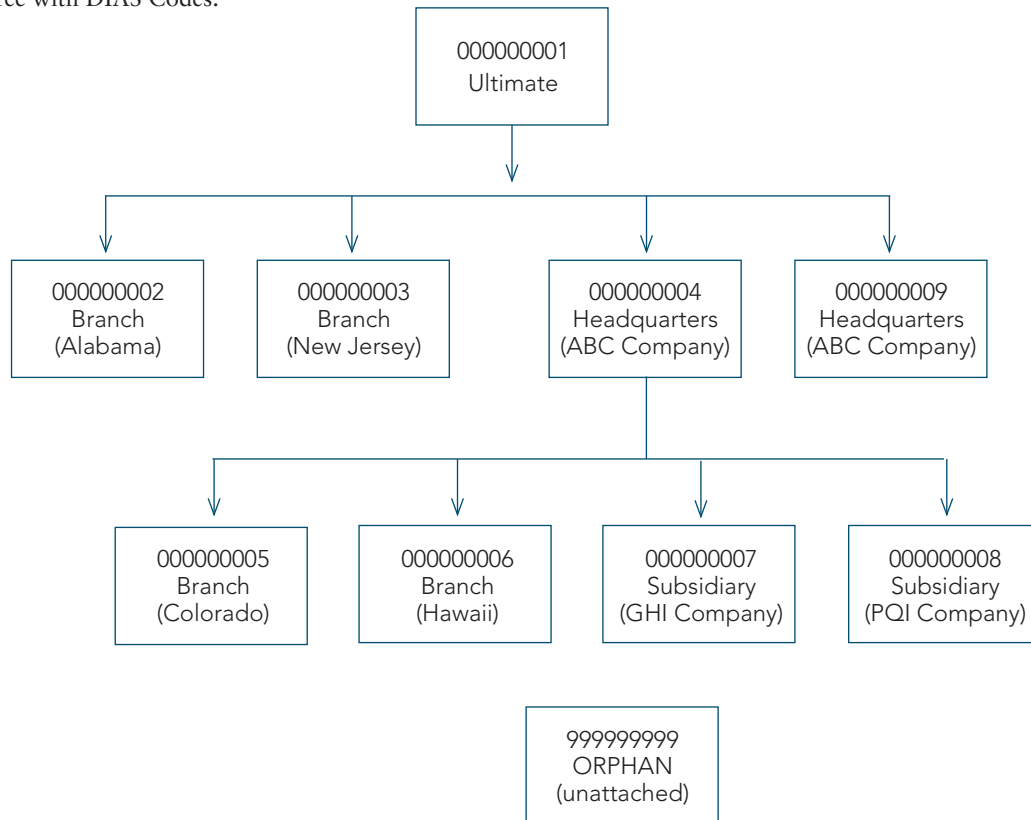
Using DIAS codes in conjunction with the status code, subsidiary code, hierarchy code, and associated linked Dun & Bradstreet DUNS Numbers can allow a better understanding of a linked business entity within a traditionally linked corporate family.

Best Practice: Corporate Legal Linkage

– When an accepted candidate contains upward linkage, save all upward linkage records – greatest depth of a Dun & Bradstreet family currently is 21 levels - in your MDM or in a Dun & Bradstreet hierarchy table. If you have access to Dun & Bradstreet data transactionally, saving the data is not necessary but being able to provide real time access to obtaining the family tree would be necessary.

– When your data matches to a standalone site, fill in the linkage data elements for Parent or Headquarter DUNS, Domestic Ultimate DUNS and Global Ultimate DUNS with the Site DUNS Number. This will help when the various business units create their own views of hierarchy. Please note that the most correct representation is no linkage as the record is not linked; however, following this recommendation can simplify analytic and reporting processes.

DUN & BRADSTREET ALTERNATIVE LINKAGES

Corporate Legal Linkage provides a strong foundation for supporting master data visibility to relationships, and can often be supplemented with Alternative Linkages to provide additional relationships between entities.

Many organizations leverage authorization or licensing to extend their brands' reach.

Alternative Linkages include groupings based on:

– Franchising & Dealership
– Partner and healthcare provider networks
– Minority Interest Ownership/Joint Ventures

Just like Corporate Legal Linkage, Alternative Linkages are maintained continuously. Methods of creating and maintaining Alternative Linkage Relationships vary. They may be:

– Derived
– Direct (sourced)
– Combination of Derived & Direct

Consistent with Corporate Legal Linkage, Out of Business entities are currently omitted.

LEVERAGE DUN & BRADSTREET ALTERNATIVE LINKAGES DATA

In addition to corporate legal linkage Dun & Bradstreet supplies CFT+ which provides alternative forms of hierarchy. This is a separate file. It is recommended to create a separate table to maintain Alternative Linkages insight. Dun & Bradstreet supports up to 6 Alternate Linkages per DUNS to support scenarios such as a SUBWAY inside a convenience store, or an auto dealer selling multiple brands.

The Alternative Linkage attributes are:

Case DUNS – This is the site location, sometimes referred to as a unit.

Case Global Ultimate – This field displays the traditional linkage HQ DUNS associated with the case DUNS. The field will be zero filled for all unlinked records.

Linkage Structure Code – Three possible values (L, N, & C). The "L" codes are for linked records not company owned. Code value "N" are unlinked records. Value "C" are company owned locations.

Franchise Type Code – This 8 digit code is a unique franchise identifier. It can be used to group like records by franchise. Four digit SIC codes are used for non-franchise entities like HealthCare records.

Corporate Linkage Type – This code identifies why this record is on the file from a high level perspective. Corporate Linkage Type designations are "A" Agent, "D" Dealer, "F" Franchise, "P" Partnership, "G", Managing Director, "C", Coop, "S", Chapter or "H" Healthcare.

Operational DUNS – This field is used to define a high ranking subsidiary within the traditional family tree of the brand. This DUNS can be used as a rollup DUNS for a concept within a brand. For example, each of the concept names under Yum Brands like Pizza Hut, Long John Silvers, A&W, Taco Bell and KFC will have separate Operational DUNS.

Op DUNS Global Ultimate – The Global Ultimate associated with the Operational DUNS. In the case of Yum Brands each Operational DUNS under the concepts will have the YUM Brands Global Ultimate DUNS.

ANALYZE RESULTS AND HIERARCHY BASELINE

Review the fill rate and completeness of your linkage hierarchies.

Check that any of the following codes are populated accurately and reflect the linkage expected based on the DUNS populated.

– Status Code
– Subsidiary Code
– Location or Hierarchy Code
– Dias Code

For example, if the codes reflect a Branch record, then the Headquarter DUNS Number should reflect a different DUNS Number than the Site DUNS Number.

What you will see once you have created your Dun & Bradstreet data hierarchies?

As part of your data quality processes you should code for any and all of the following possibilities:

1. Linkage on the record which is reflected accurately

2. Standalone records showing no linkage elements or if following suggested Best Practice Headquarter/Parent, Domestic Ultimate and Global Ultimate DUNS Number show the same DUNS Number as the standalone site DUNS Number

3. An Orphan branch status or subsidiary indicator is showing that it is part of a tree but it is showing incomplete or missing linkage with it

   Exception handling: Follow process for Last Known Linkage. This is rare. If found follow up as an issue with Dun & Bradstreet.

4. Single site locations (not standalones) showing no linkage and all other entities showing linkage elements appropriately populated

   – This could be a licensing issue.

      Check to see if you are working with a subset of the Dun & Bradstreet full universe: for example, Marketable records vs. all linked records.

   – The record is active and linked but under review such as a Nixie (Unable to Contact) record.

      Exception handling: Follow process for Last Known Linkage until review is completed and record is updated by Dun & Bradstreet.

   – The record could be alternatively linked.

      Check to see if the Alternative Linkage file is in use, and if not, see if it is an option to add it.

5. Duplicate records with the same DUNS

   Confirm that it is a dupe through your Data Stewardship processes. Prioritize the action required based on the immediacy of response needed.

   – Record resolution is a priority - Provide Dun & Bradstreet with any analysis done to confirm duplication. Dun & Bradstreet will review and either merge/delete or provide an explanation why both are needed asap.

   – Record resolution is not a priority - Through Dun & Bradstreet's thousands of quality checks we will find this issue and resolve appropriately.

      Exception handling for either: Choose one of the records to be the record not set as a dupe based on the most completeness and correctness. Send the duplicate record through the Tracking Linkage Issue Resolution Process and record issue as 'Dupe'.

6. Records that have similar names but are not linked together or records where linkage seems to be missing

   There are several reasons why linkage may not be provided. They are:

– Legal structure: Broadly speaking, Dun & Bradstreet bases linkage on capital stock ownership. A company must own more than 50% of the capital stock in an organization for linkage to appear in the database. Therefore, there will not be linkage present when only a minority interest of the capital stock (<50%) is held by the "parent." For example, if ABC Company owns 48% of the stock in ABC Manufacturing, they would not be linked in a parent to subsidiary relationship. Reference would be made in the Business Information Report (BIR) to the fact that they are affiliated, but ABC Manufacturing would not be linked as a subsidiary of ABC Company.

– Joint ventures will not be linked, since each company owns 50% of the stock and there is no majority ownership.

– Global Database dynamics: corporate linkage relationships are constantly changing, reflecting the ongoing mergers, acquisitions, reorganizations and consolidations. As these changes happen, Dun & Bradstreet makes updates to individual sites in a corporate family daily. Depending on how you receive D&B data you can obtain these changes via API and in near real-time.

– Ownership of the company was not available at the time the record was either created or updated. The record may need to be linked into a family tree, but if Dun & Bradstreet cannot confirm the ownership, and we have confirmed the existence of the business, the record may temporarily appear in the database as an active, but unlinked record. We conduct sweeps for these records through our Global Look-Alike process on a regular basis, but because of the sheer volume of data Dun & Bradstreet processes each day, it can happen that as records are resolved, others are added through file build and update processes. Due to the enormity of the database, and the frequency with which the data is updated, a small number of records with this condition are inherent within the database.

– Mutual funds, trusts: Most Mutual Funds, Trusts and SPVs (Special Purpose Vehicles) are legal entity corporations, usually set up by other businesses for financing purposes. . . often "at arm's length". . . meaning they usually are set up with no legal ownership. Mutual Funds, Trusts and SPVs appear as single entities, since no other entity owns more than 50% of the stock of the trust or fund.

– Out of Business: When it is determined that active operations are no longer being conducted at a site, the Dun & Bradstreet DUNS Number is taken to Out of Business status and the linkage is removed. The OB indicator should be used to identify these situations. Based on your update process:
   ◦ Accept it
   ◦ Post pone it
   ◦ Keep last known linkage for historical purposes

7. Linkage is actually wrong

   Exception handling: Follow process for Last Known Linkage. This is rare. If found, follow up as an issue with Dun & Bradstreet.

Adjust as Necessary

Having holes in your foundational linkage can create difficulties with providing 360 degree views of the customer. It can also lead to inaccuracies in business views. Providing linkage history and a resolution process will minimize the gaps until issues are resolved.

Maintain Minimal Hierarchy History

Best Practice: Keep a hierarchy history table which will contain Last Known Linkage for one month (from previous update file) or sooner if that record gets updated for all records. This will provide the basis for tracking linkage resolution.

Tracking Linkage Issue Resolution Process

Within your hierarchy history table, provide current MDM hierarchy fields as well as these additional elements:

   – Source of issue (Should be limited to appropriate sources including Data Steward)

   – Issue

   – Issue discovered date

   – Hierarchy Data Steward review

   – Hierarchy Data Steward reviewed date

   – Where in process indicator (include a selection of all of the steps in your process for tracking, including Interim state linkage provided as described in the Interim Linkage Resolution Process)

   – Last update date

All elements, exclusive of dates, should be a list of finite values. A process flow encompassing issue discovery to issue resolution should include initiating and updating these elements as appropriate.

Last Known Linkage Process

Best Practice: Resolving linkage issues through Dun & Bradstreet may take several days and even months to complete. While the linkage issue is being resolved, provide Last Known Linkage where available. From within the Hierarchy history table provide the last know linkage and send the record through the Tracking Linkage Issue Resolution Process.

Interim Linkage Resolution Process

Best Practice: For issues involving missing linkage where there is no last known linkage, provide an interim state linkage connection– this will alleviate issues in the future. Provide this record to a Data Steward to discover where in the family tree you would expect this member to be. To ensure the best possibility at being correct over time, pick the record in the family tree that looks the most like the one you are trying to link based on name, location, legal status, etc. populate the missing linkage the same as the selected record and update the Linkage Issue Resolution elements as appropriate.

APPLYING YOUR CUSTOM BUSINESS VIEWS

The high cost of custom views

Often times, providing Dun & Bradstreet's legal and alternative linkage views provides the baseline for the various business needs of the end user. In addition to the baseline hierarchy, business users manually customize the Dun & Bradstreet hierarchies to meet their specific business requirements. The creation of multiple hierarchy views derived from the base Dun & Bradstreet hierarchies allows for different roll up views of the customer or entity base. Keep in mind that views we are referring to here all relate to a business location either being added or removed from a corporate family tree. These views are explicit hierarchies that are manually created and maintained and are ragged in roll up structure.

It is important to understand the business justification and who owns this view. The hard part of customized hierarchy views isn't getting it right - but keeping it right. By continuing to provide Dun & Bradstreet's legal and alternative hierarchy structures there will always be a solid baseline to fall back on as needed. It is recommended that the business unit requesting the customized view provide insight into the business process to create and manage the view.

Understand your business process

– Where will the view be created and maintained?
– Who will create the view and who will maintain it?
– What are the data governance rules defined to help maintain it?
– What is the process to maintain it?

Prioritize variances needed for view

The number of different customizations requested can be numerous and will be labor intensive. Prioritize which explicit views are truly needed to run the business as compared to which ones are wanted and less impactful to the business.

Variances to the foundational model

There are a few typical views requested layered on to the Dun & Bradstreet baseline hierarchy. They are (examples will follow):

1. Combining two or more Dun & Bradstreet full families
   The example provided to follow shows The Coca Cola Company and Coca Cola Bottling, two extended family trees combined into one for a view created for Sales (only a few family members are shown for illustrative purposes)

2. Combining pieces of Dun & Bradstreet families into one
   The example provided combines the full Dun & Bradstreet families The Walt Disney Company and Euro Disney and Dun & Bradstreet standalone locations of Disney Store and Radio Disney (only a few family members and standalone locations are shown for illustrative purposes only)

3. Splitting one Dun & Bradstreet Family into more than one family
   The example provided splits the National Amusements entities of CBS and Viacom (only a few family members are shown for illustrative purposes)

4. Retain linkage on full OOB families
   An example is not needed as this is more a policy than a manual effort. If retaining linkage on OOB records is required, than a check for change to OOB should be flagged and previous linkage retained. It will be important during reporting etc. to ensure that there is clear visibility that the records are OOB.

Creation of Aggregation records

When combining or splitting families, it is important to **not change the derived Dun & Bradstreet data.** This data should always be maintained in order to provide foundational structure. You may find the need to create aggregation records (aka as consolidation records) which are designed to provide explicit linkage groupings. In order to create aggregation records you must include an additional master data attribute 'record type' that will be a finite list and include 'aggregate' as a type. It will not have any other meaning other than for linkage purposes. You may have several types of aggregation records such as marketing aggregation records and/or sales aggregation records.

It is recommended to keep aggregation records in a separate table with a creation date and source other than within your hierarchy table. Depending on how many views you have, you may want an aggregation table for each view. The data governance and maintenance of each business view will vary, and having separate tables can help in managing the various levels of quality.

Best Practice: Often times it may seem easier to select the existing top most node or another selected node within the family tree to aggregate to. This is not best practice mainly because if anything changes within that existing family tree such as a merger or acquisition, the aggregation point may become obsolete. Creating an aggregation record is a cleaner concept to work with.
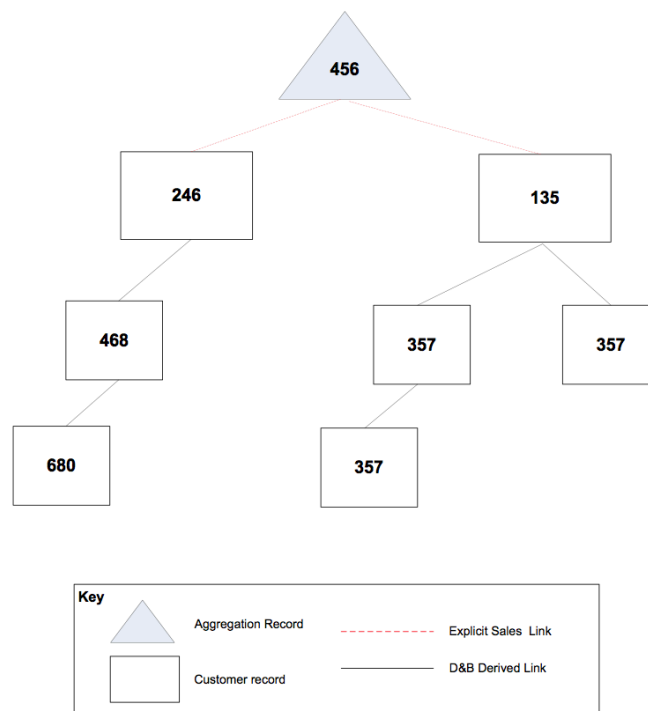
Process to create additional views

Combining Families:

1. Identify which families will be combined. Select the top family member to include as you will include all Dun & Bradstreet linkage below this family member.

2. Create an aggregate record to serve as the top parent node.

3. Create the relationships between the top family records using your client numbering system to populate this relationship. It is possible to populate the relationship with DUNS Numbers but in the instances where you do not have DUNS Numbers or DUNS Numbers are being created you will have a mix of numbering systems.

4. Define a minimum data schema which will show minimally what/how to populate applications rules, etc. and have minimum inheritance form the object model.

5. Add additional nodes to assist with this a new top parent node for each family you want to combine. If you want to add additional levels then the work is exponential.

Combining Two Families View example:

|	Customer ID	D&B Provided	D&B Provided Hierarchy (as available)						Sales Explicitly Created Hierarchy		Marketing Explicitly Created Hierarchy	
		Site DUNs	HQ DUNs	DU DUNs	GU DUNs	Operational DUNs	Operational GU DUNs	Sales Aggregate ID	Sales Aggregate GU DUNs (if available)	Marketing Aggregate ID	Marketing Aggregate GU DUNs (if available)
Aggregate Record	456										
Coca Cola Bottling United	246	72108103	72108103	72108103	72108103			456			
Vendworks, LLC	468	102199010	72108103	72108103	72108103						
Vendorks (Branch)	680	832420868	102199010	102199010	72108103						
THE COCA-COLA COMPANY	135	3296175	3296175	3296175	3296175			456			
Caribbean Refrescos, Inc.	357	90235573	3296175	3296175	3296175						
COCA-COLA REFRESHMENTS USA, INC.	579	118267624	3296175	3296175	3296175						
COCA-COLA REFRESHMENTS USA, INC. (diff location)	791	199893285	118267624	3296175	3296175						

Combining Pieces of Families or Standalones:

1. Identify which entities will be combined. Select the top family member to include as you will include all Dun & Bradstreet linkage below this family member.

2. Identify any standalone locations that will be included.

3. Create an aggregate record to serve as the top parent node.

4. Create the relationships between the aggregate record, the top family records and the standalone records using your client numbering system to populate this relationship. It is possible to populate the relationship with DUNS Numbers but in the instances where you do not have DUNS Numbers or DUNS Numbers are being created you will have a mix of numbering systems.

5. Define a minimum data schema which will show minimally what/how to populate applications rules, etc. and have minimum inheritance form the object model.

Combining Pieces View example:

|	Customer ID	D&B Provided	D&B Provided Hierarchy (as available)						Sales Explicitly Created Hierarchy		Marketing Explicitly Created Hierarchy	
		Site DUNs	HQ DUNs	DU DUNs	GU DUNs	Operation al DUNs	Operatio al GU DUNs	Sales Aggregate ID	Sales Aggregate GU DUNs (if available)	Marketing Aggregate ID	Marketing Aggregate GU DUNs (if available)
Aggregate Record	456											
The Walt Disney Company	789	932660376	932660376	932660376	932660376			456			
The Disney Store	963	23863179						456			932660376
Radio Disney AM 910	246	152935768						456			932660376
Euro Disney SCA	135	381517754	381517754	381517754	381517754			456			
Disney Interactive Studios, Inc	579	58025797	932660376	932660376	932660376						
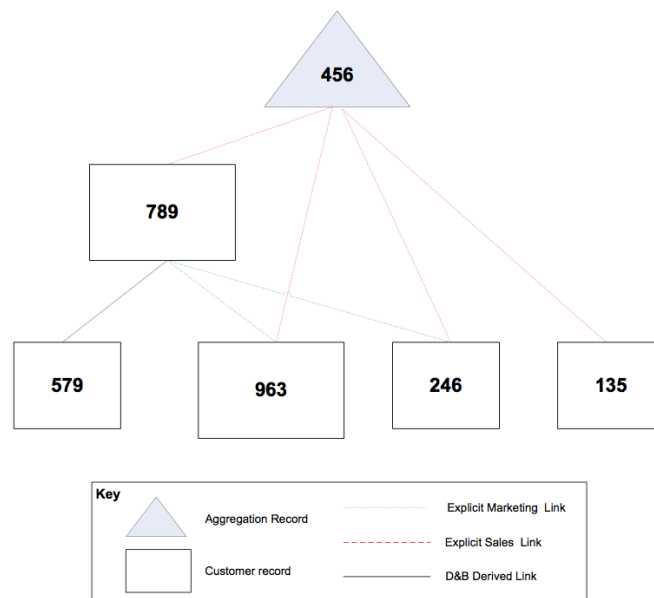
Splitting Families:

1. Identify which families will be split. Select the top family member to include as you will include all Dun & Bradstreet linkage below this family member.

2. Identify any standalone locations that will be included.

3. Create at least two aggregate records to serve as the top parent nodes.

4. Create the relationships between the top family records and the new top parent nodes using your client numbering system to populate this relationship.

5. Define a minimum data schema which will show minimally what/how to populate applications rules, etc. and have minimum inheritance form the object model.

Splitting Families View example:

	Customer ID	D&B Provided	D&B Provided Hierarchy (as available)						Sales Explicitly Created Hierarchy		Marketing Explicitly Created Hierarchy	
		Site DUNs	HQ DUNs	DU DUNs	GU DUNs	Operation al DUNs	Operatio al GU DUNs	Sales Aggregate ID	Sales Aggregate GU DUNs (if available)	Marketing Aggregate ID	Marketing Aggregate GU DUNs (if available)
Aggregate Record	123											
Aggregate Record	456											
National Amusements, INC.	789	49422439	49422439	49422439	49422439							
CBS Corp	963	154287825	49422439	49422439	49422439			123				
Blockbuster Video	246	87639717	154287825		49422439			123				
CBS College Sports Network Inc.	680	125991195	154287825		49422439			123				
VIACOM Inc.	135	615335358	49422439	49422439	49422439			456				
VIACOM Inc. (Arizona branch)	579	830248477	615335358	615335358	49422439			456				
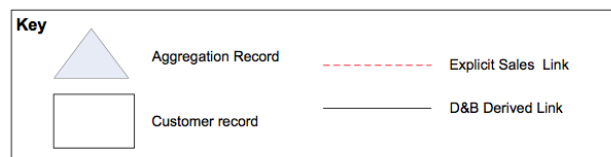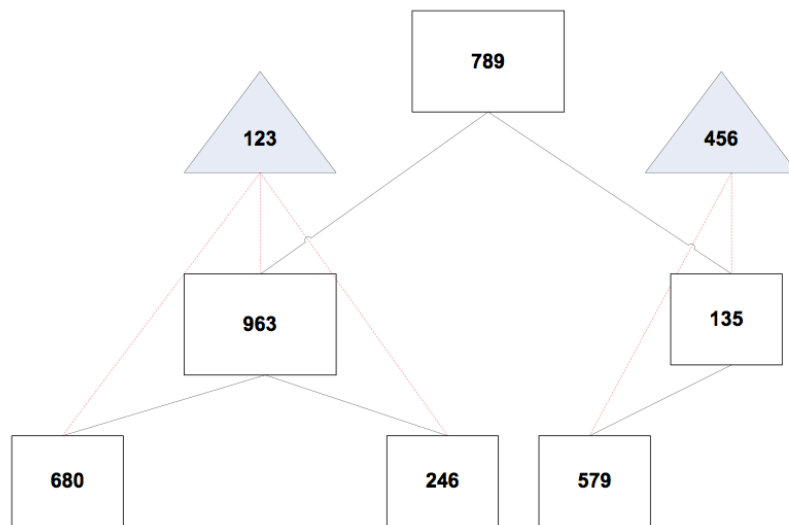
CONCLUSION

This guide is designed as a resource to assist you in implementation of corporate hierarchies however, we know there is a lot to consider and design for. Dun & Bradstreet has Best Practice Consultants and Solution Architects available to provide you with guidance while you are on your Master Data journey. We also have Dun & Bradstreet Consulting teams that can provide in-depth assistance to ensure your hierarchies are implemented strategically and accurately. If you need additional assistance please work through your Dun & Bradstreet Sales team for additional resources.

APPENDIX

Dun & Bradstreet linkage data elements

Where available/applicable to include within your customer data model

1. Site DUNS
2. Parent or Headquarter DUNS
3. Domestic Ultimate DUNS
4. Global Ultimate DUNS
5. Status Code
6. Subsidiary Code
7. Location or Hierarchy Code
8. Dias Code
9. Out of Business
10. Nixie

Alternative Dun & Bradstreet linkage data elements

Where available and applicable to include within your customer data model: (up to 6 alternative linkage views possible

11. Case DUNS Number
12. Case Global Ultimate
13. Linkage Structure Code
14. Franchise Type Code
15. Corporate Linkage Type
16. Operational DUNS Number
17. Op DUNS Global Ultimate

Hierarchy History Table

1-17 above

18. Source of issue (Should be limited to appropriate sources including Data Steward)
19. Issue
20. Issue discovered date
21. Hierarchy Data Steward review
22. Hierarchy Data Steward reviewed date
23. Where in process indicator (include a selection of all of the steps in your process for tracking including Interim state linkage provided as described in the Interim Linkage Resolution Process)
24. Last update date

Aggregation Table(s)

Where available and applicable to include within your customer data model: (up to 6 alternative linkage views possible

1. Customer ID
2. Site DUNS
3. HQ DUNS
4. DU DUNS
5. GU DUNS
6. Operational DUNS
7. Operational GU DUNS
8. Sales Aggregate ID
9. Sales Aggregate GU DUNS
10. Marketing Aggregate ID
11. Marketing Aggregate GU DUNS
12. Etc.

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