dun & bradstreet

Master Data:

Implementing Dun & Bradstreet Hierarchies and Custom Hierarchy Views

MASTER DATA KNOWLEDGE SERIES

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Introduction

Hierarchy Implementations

Implementing the ability to view and understand the company hierarchies associated with your key business relationships 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 make or break the use and ultimate value of Master Data for an organization, so ensuring that hierarchies are implemented thoughtfully and strategically is critical to success.

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

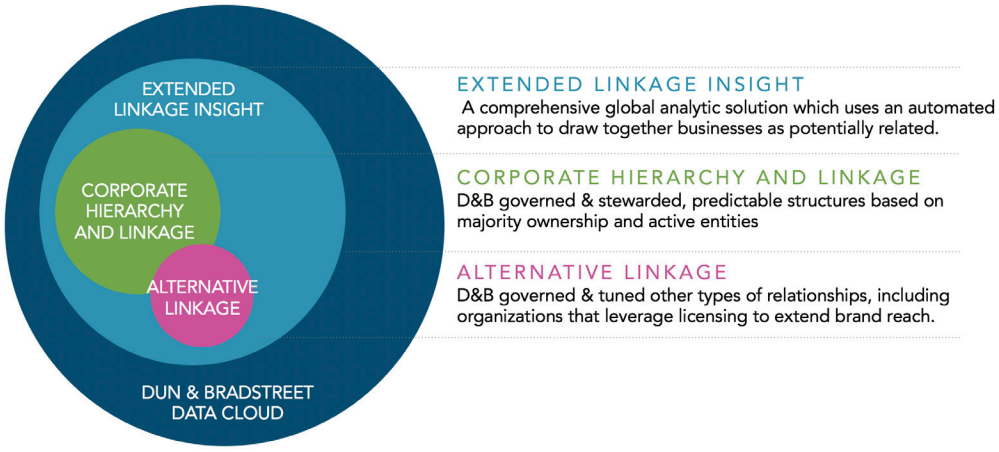
This methodology uses as its foundation the hierarchies that Dun & Bradstreet identifies, creates and maintains in our Data Cloud and Live Business Identity. Additional guidance for specific business-required views on top of or in addition to the Dun & Bradstreet hierarchies is also provided. Using Dun & 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 and is also available to roll back to if business unit hierarchy creation, governance or maintenance gets out of hand. Hierarchies identified by Dun & Bradstreet are held in the Dun & Bradstreet Data Cloud and exposed through our Live Business Identity. Elements in the Data Cloud are updated 375 million times per day, so you can be confident information is current. Each business entity in the Data Cloud has been assigned a Dun & Bradstreet D-U-N-S® Number, our unique 9-digit identifier. Using Dun & Bradstreet hierarchies as your foundation provides your Master Data program with all the benefits of Dun & Bradstreet's resources and infrastructure.

Corporate family trees in different industries may have varying and unique characteristics. For example:

- Large multinational companies have much bigger family trees than large national companies
- Financial companies, governments and large national transportation companies have relatively high proportions of branches in their family trees
- Energy and utilities, telecommunication and transportation companies (except large national transportation) have a relatively high proportion of headquarters (HQs) and single locations
- Governments have a flatter hierarchical structure with a large percentage of family members directly reporting to the global ultimate

It is optimal to have a variety of different hierarchy capabilities to meet the various types of family structures as well as the various use cases and views required of relationships.

DUN & BRADSTREET HIERARCHY CAPABILITIES



Saleem Khan
Global Leader, Data Innovation
Dun & Bradstreet

DUN & BRADSTREET HIERARCHY OVERVIEW

This guide provides a step by step methodology for implementing corporate hierarchies. Some of the information provided here regarding Dun & Bradstreet hierarchies and 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 directly sourced, derived or inferred between different active or inactive business entities or specific sites within a corporate family. Linkage can take several forms. The most traditional form occurs in the Dun & Bradstreet Data Cloud 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. The newest form of linkage occurs using predictive algorithms and machine learning to identify family member candidates providing the most comprehensive and expansive view of a corporate family tree (also called a hierarchy).

As of Q2 2019, there are 115M global entities in the Dun & Bradstreet's Data Cloud that are linked in some way. Of those approximately 22M active records are legally linked as part of a corporate hierarchy and approximately 3M records are alternatively linked. The remaining 185M+ records in the Data Cloud are categorized as standalone businesses.

Dun & Bradstreet does not limit the depth and breadth of the family trees we can identify and display, but most families are small in size. The deepest tree within a family at last review was 21 levels.

Corporate Hierarchy & Linkage shows corporate relationships with majority ownership (> 50% of stock). There are two types of corporate legal linkage relationships in our Data Cloud:

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

Corporate Hierarchy & Linkage can exist for commercial entities, governments, and non-profit organizations regardless of size. *Corporate legal linkage is not displayed on out of business records. The record must be active for this linkage status.*

Alternative Linkage - Those relationships outside of majority ownership are also identified when possible. 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 through a separate linkage capability called Alternative Linkage. Just like Majority Ownership Hierarchies, Alternative linkage is not displayed on out of business records. The record must be active for this linkage status.

Between Corporate Hierarchy & Linkage and Alternative Linkage a wide-variety of common linkage needs are served through an objective, rules-based process. These linkages are vetted and confirmed and in compliance with these published rules. Records are not linked to a family if the identified relationship fails to qualify based on the definition and rules guiding these relationships types, even if it may seem logically appropriate.

In the past when there was a need to more comprehensively group records, businesses initiated their own process to create a custom view(s) based on their unique needs. Creating and maintaining these custom views generally involves manual processes. This has proved to be time consuming, resource intensive, biased and non-scalable. Dun & Bradstreet's latest linkage capability solves for this need.

Extended Linkage Insight – provides an analytically-driven process to further expand and identify additional connections and family trees which up until now have used only standard rules. Extended Linkage Insight aggregates super families inclusive of Corporate Hierarchy & Linkage and Alternative Linkage. It narrows down groups of records for auto-acceptance into a family, auto-decline from a family, and manual review based on insight on the type of link provided.

Extended Linkage Insight provides:

1. Expanded family tree COVERAGE – grouping majority owned, minority owned and affiliated businesses together for more comprehensive master data management, marketing, and risk management initiatives.
2. Operational EFFICIENCY – reducing the time spent on manual processes of investigating and linking records to families beyond what is linked using Corporate Hierarchy & Linkage and Alternative Linkage standards.
3. Improved ACCURACY – reducing the inaccuracy rates associated with human-error and subjective judgement using a validated analytical-based objective process with known accuracy benchmarks

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 (BDP's), 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 D-U-N-S 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? 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 in addition, 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

D-U-N-S Numbers are assigned to the lowest possible organizational level, i.e. business locations with a unique, separate and distinct operation. Only Dun & Bradstreet assigns D-U-N-S Numbers which helps ensure accuracy, consistency, timeliness and cross-border consistency of information. Dun & Bradstreet follows 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 D-U-N-S 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 D-U-N-S 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 relate (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

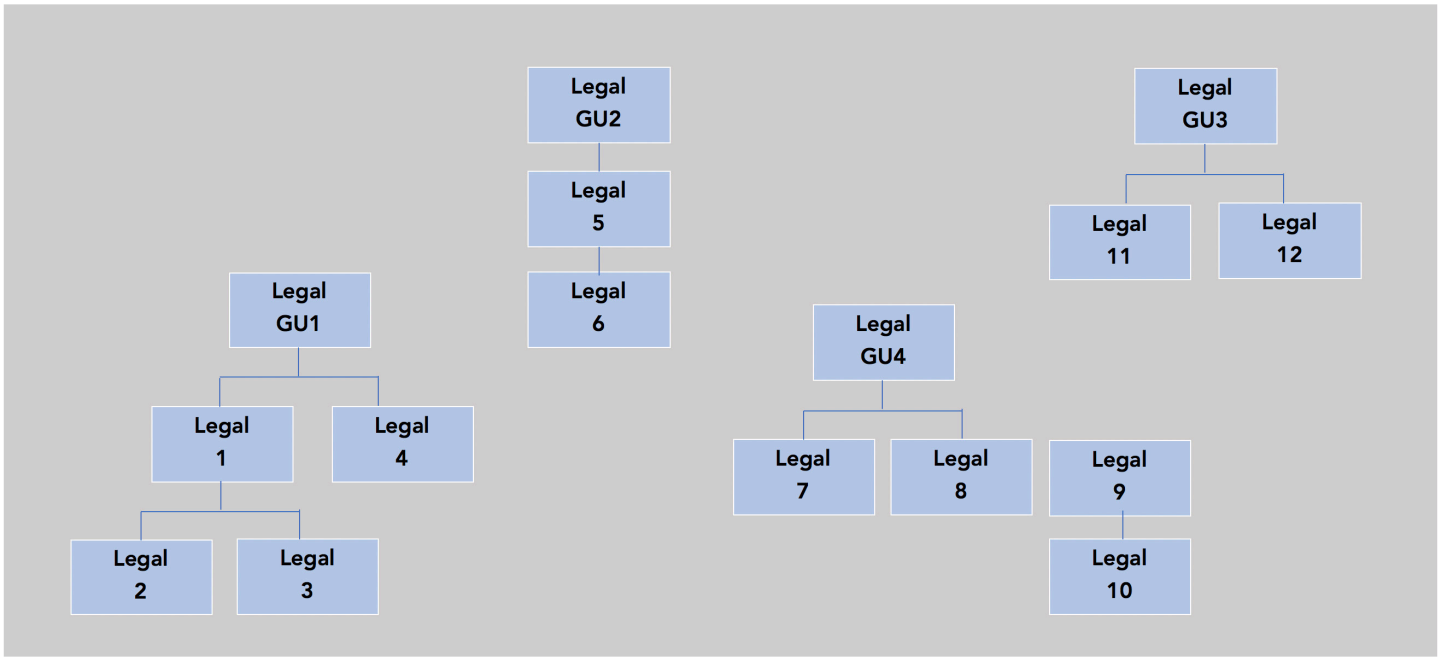
If the match option you select, provides you with multiple candidates and the match candidates have the same confidence level:

- *Select the candidate with the highest level on the family tree*
- *The candidate selected should not be an OOB (out of business) record (OOB records do not have legal or alternative hierarchy information) unless there is a specific use case for OOB records such as matching to legacy data where OOB records are probable.*

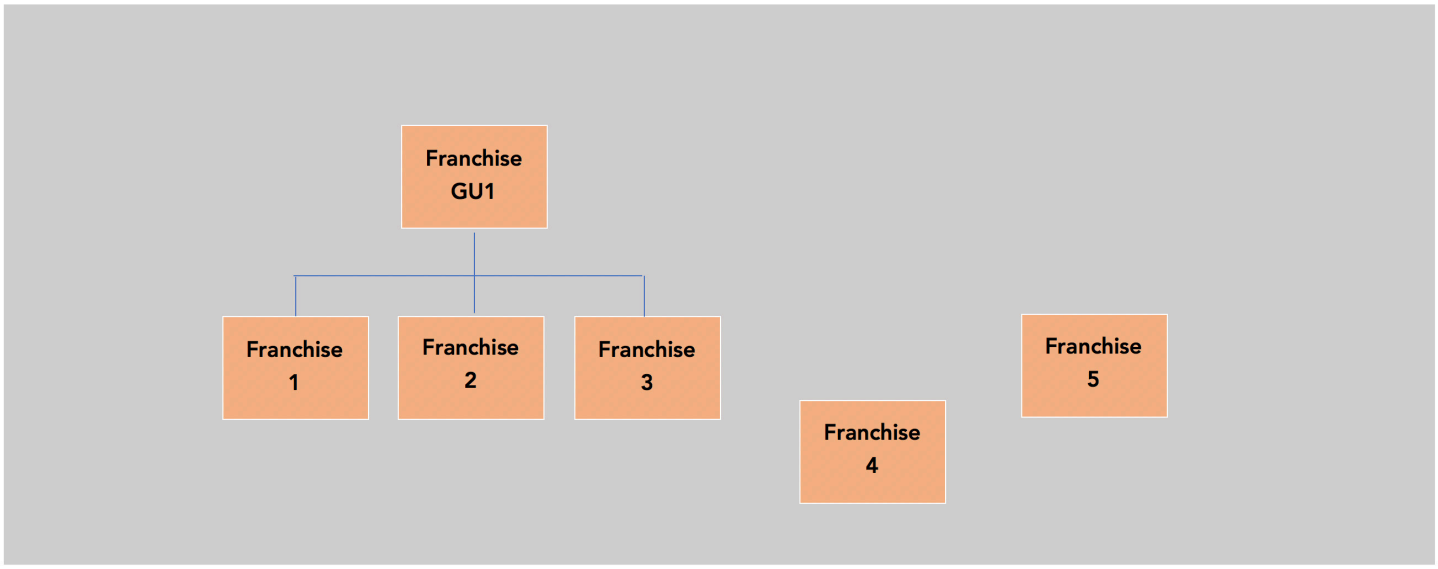
UNDERSTAND DUN & BRADSTREET HIERARCHIES

The two main types of hierarchies Dun & Bradstreet identifies: Majority Ownership and Alternatives Linkage, work independently. Alternative Linkage is often looked at as a great supplement to Majority Ownership Hierarchies. Dun & Bradstreet's newest hierarchy capability, Extended Linkage Insight incorporates all Dun & Bradstreet hierarchy types together to form "super families". Let's look at the types individually and then how they work together as a comprehensive option.

Corporate Hierarchy & Linkage

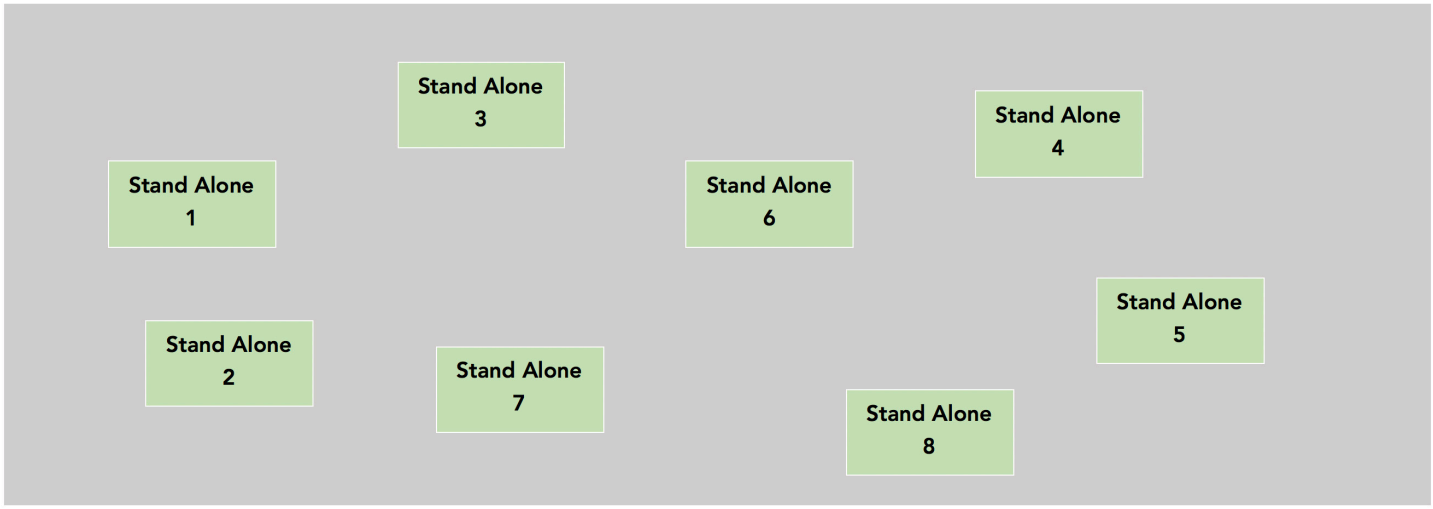


Alternative Linkage

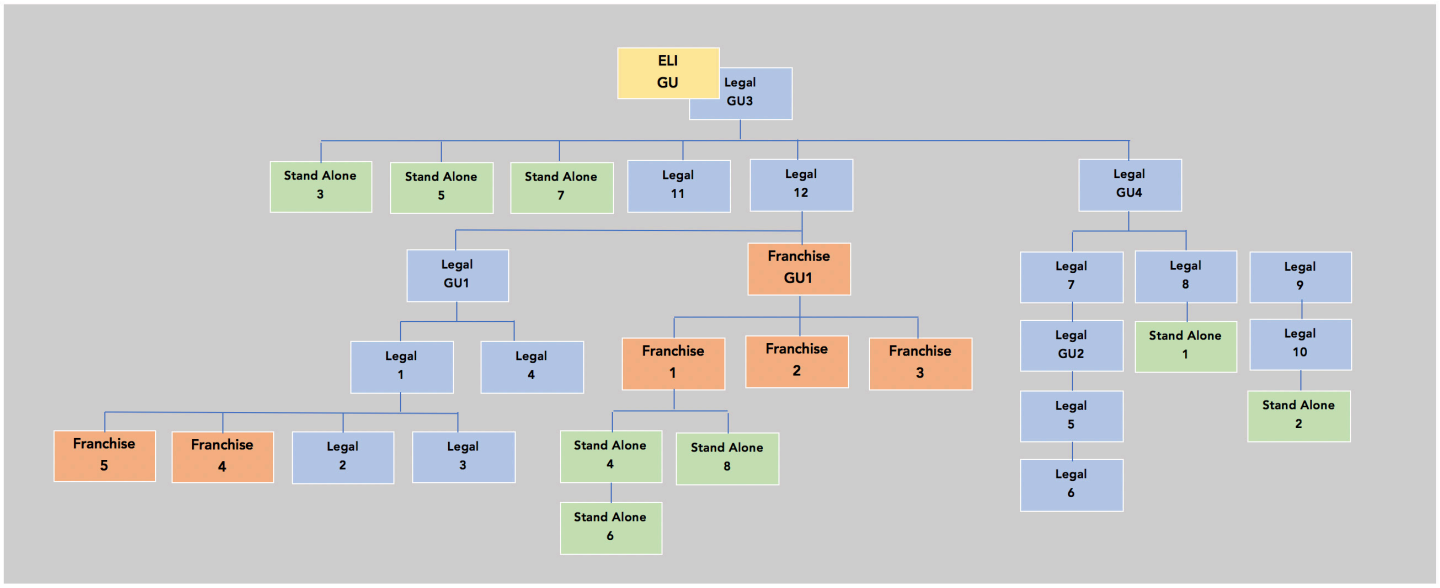


Stand Alone Entities

No linkage indicated, D-U-N-S Number only



Extended Linkage Insight – brings together the concept of a "super family"



CORPORATE HIERARCHY & LINKAGE

MAJORITY OWNERHIP CLASSIFICATIONS

Corporate Hierarchies have seven classifications of businesses. 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 D-U-N-S Number appears in the headquarter/parent D-U-N-S 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 D-U-N-S 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 CORPORATE HIERARCHY & LINKAGE DATA

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

1. **Site D-U-N-S Number:** The D-U-N-S Number that represents that specific entity / location.

2. **Parent or Headquarter D-U-N-S:** The D-U-N-S Number that represents the immediate entity above the site D-U-N-S.

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

4. **Global Ultimate D-U-N-S:** The D-U-N-S Number that represents the highest member of the entire family tree.

Take note that:

– A branch record carries its own D-U-N-S Number (site), that of its headquarters, that of its domestic ultimate, and that of its global ultimate.

– The Parent / Headquarter D-U-N-S 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 D-U-N-S Number in this field is for a Headquarter or a Parent relationship to the site D-U-N-S Number.

– A subsidiary carries its own D-U-N-S 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. There may be more than one domestic ultimate in a corporate legal family at the country level.

– The global ultimate record is at the very top of the global corporate hierarchy. There is only one per family.

Best Practice: Hierarchy Levels Needed

For most master data implementations, enabling access to the three standard levels of majority ownership hierarchies is all that is necessary.

TYPE OF LINKED SITE RECORD AND PLACEMENT WITHIN THE MAJORITY OWNERSHIP 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 legal 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.

Direct+ API Family Placement Data

These key Direct+ API elements are used to construct Dun & Bradstreet linkage.

Isstandalone is populated with *true* or *false* depicting if the record is part of a corporate family tree or not. When these field is *"true"* the next two ELI hierarchy elements are blank.

FamilyTreeRolesPlayed provides ***description*** and ***dnbcode*** for up to four roles played. The insight provided is:

Description	dnbcode
Global Ultimate	12755
Domestic Ultimate	12774
Parent/Headquarters	9141
Subsidiary	9159
Branch/Division	9140

Hierarchylevel is a two-position counter that indicates the number of family tree levels below the global ultimate. The hierarchy level value of the global ultimate will always be 1. Each subsidiary level below the global ultimate is incremented by one. Branch locations in a family tree will have the same hierarchy code as its associated headquarter. Global Ultimates have a hierarchy code of *"01"*.

Flat File Family Placement Data

These key elements used to construct Dun & Bradstreet linkage are the Status Code, Subsidiary Code, Hierarchy Code and Global Ultimate D-U-N-S Number.

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

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

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

- o Subsidiary = 3
- o 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:

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

Status and Subsidiary Code Combinations:

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 D-U-N-S Integrated Assigned Sequence and is not provided in every flat file layout. 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 Data Cloud.

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.

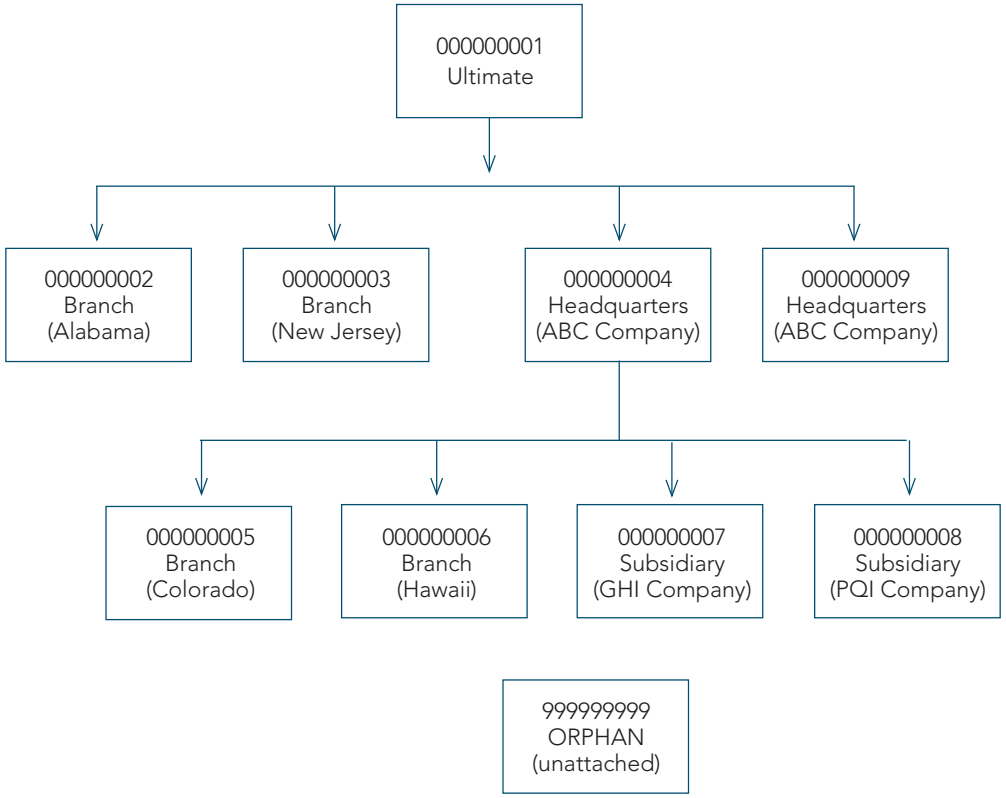
– Branches will be sorted in geographical order.

– 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 D-U-N-S Number which is also 9 digits.)

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.

Below is a sample tree with DIAS Codes.



Best Practice: Corporate Hierarchy & 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 D-U-N-S, Domestic Ultimate D-U-N-S and Global Ultimate D-U-N-S with the Site D-U-N-S 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.

ALTERNATIVE LINKAGE

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

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

Alternative Linkage include groupings based on:

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

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

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

Consistent with how we handle Corporate Hierarchy & Linkage, Out of Business entities are currently omitted.

LEVERAGE ALTERNATIVE LINKAGE DATA

In addition to Corporate Hierarchy & Linkage Dun & Bradstreet supplies Alternative Linkage which provide alternative forms of hierarchy. This is a separate capability. It is recommended to create a separate table to maintain the full set of Alternative Linkage insight. Dun & Bradstreet supports up to 6 Alternate Linkage per D-U-N-S to support scenarios such as a SUBWAY inside a convenience store, or an auto dealer selling multiple brands.

The Alternative Linkage attributes are:

Case D-U-N-S – This is the site location, sometimes referred to as a unit.

Case Global Ultimate – This field displays the traditional linkage HQ D-U-N-S associated with the case D-U-N-S. 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 D-U-N-S – This field is used to define a high-ranking subsidiary within the traditional family tree of the brand. These D-U-N-S can be used as a rollup D-U-N-S 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 D-U-N-S.

Operational D-U-N-S Global Ultimate – The Global Ultimate associated with the Operational D-U-N-S. In the case of Yum Brands each Operational D-U-N-S under the concepts will have the YUM Brands Global Ultimate D-U-N-S.

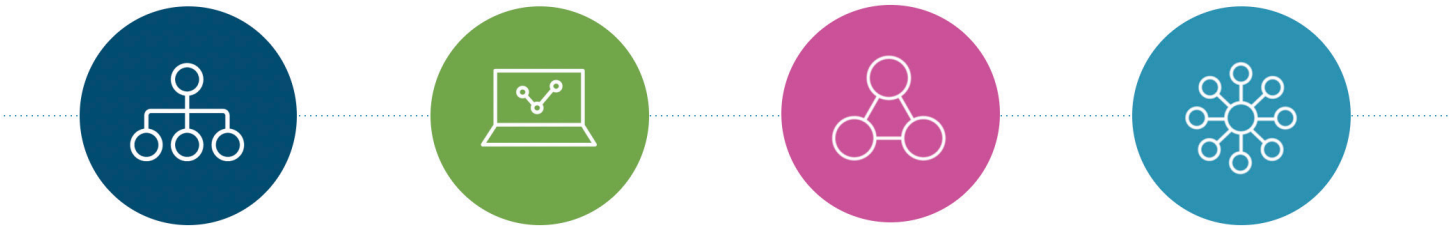
Most Franchise Type Codes and Operational D-U-N-S are 1-to-1 associated. A very small percentage have multiple franchise brands assigned to the same Operational D-U-N-S. This happens when a distinct Operational D-U-N-S is not able to be identified to use for a given brand based on how the organization set itself up.

EXTENDED LINKAGE INSIGHT

Extended Linkage Insight (ELI) is Dun & Bradstreet's predictive linkage solution that uncovers like entity ***candidates*** using majority ownership linkage, alternative linkage as well as 20+ additional attributes, providing a complete corporate hierarchical view including modeled candidates that might have gone unidentified with Corporate Hierarchy & Linkage and Alternative Linkage alone.

ELI will not break any majority owned links. It only adds potential links not found in Corporate Hierarchy & Linkage or Alternative Linkage.

What is the process for creating Extended Linkage Insight?



Uses existing Hierarchies + Alternative Linkage as foundation

Leverages Machine Learning to extract, infer and cluster on "brand" & identify potential relationships for unlinked records and Global Ultimates

Assesses potential relationships using factors like Name Similarity, Line of Business & comparison to confirmed linkages

RESULT:
Brings together multiple hierarchies (Global Ultimates) and standalones, including inactive records.
You decide which to use

LEVERAGE EXTENDED LINKAGE INSIGHT DATA

ELI Family BRAND Name – The brand name of D-U-N-S extracted by Extended Linkage algorithm. For example, if the Business Name is "The Dun & Bradstreet Corporation", then Brand Name will be "DUN&BRADSTREET".

ELI Global Ultimate - The highest parent within the Extended Linkage family. A Parenting Score is calculated to find which D-U-N-S is more likely to be a parent so the D-U-N-S with highest likelihood to become a parent within the ELI family is designated as the ELI Global Ultimate. When Legally Linked records are included in an ELI family, the Legal GU D-U-N-S with highest Parenting Score is defined as the ELI Global Ultimate.

ELI Parent - Algorithmically assigned parent within the Extended Linkage family when not part of a legal family tree already. When legal linkage exists, extended parent will be equal to legal parent

ELI Domestic Ultimate - Based on the calculated Parenting Score, within each family the D-U-N-S with highest likelihood to become a parent in each country is defined as ELI Domestic Ultimate. Within each ELI family there is only one Domestic Ultimate per country.

Extended Linkage Source Code - This code indicates the source of linkage:

Code "9" is assigned when majority ownership linkage is present.

Code "8" is assigned when a locally reflected relationship is present but omitted from the Majority Ownership Linkage.

Code "7" is assigned when an alternative linkage is present.

Codes "3" to "6" are assigned whenever a modeled relationship is present.

Note: The source codes of 3 - 6 are correlated with Linkage Name Evidence Score, SIC Evidence Score, Brand Evidence Score, Phone Evidence Score, CEO Evidence Score and etc. in row 15-22. The more evidences we've seen in those scores, the higher the source code will be.

Extended Linkage Association Type - This is not present for every record only as appropriate. Indicates the type of association and that is intended to provide insights into the nature of the relationship between the entities. It is sourced from alternative linkage when alternative linkage is present. When alternative linkage is not present, type is inferred by the model based on the brand name extracted and the child's line of business. A NULL value is returned if the type does not fall into one of the following categories:

"L" = Legal Linkage

"A" = Agent

"D" = Dealership

"F" = Franchiser

"P" = Partnership relationship

"C" = Co-op

"H" = Health providers, Clinics or Hospitals

"S" = Chapter – Non-Profits like Habitat for Humanity

"G" = Managing Director – When one company acts as the Managing Director for another company (known as Common Board Members)

"R" = Home Party Representative – When a homeworker is selling products like AVON, Various cosmetics, jewelry, etc.

Extended Linkage Name Evidence Score for source code ranging from 3 to 6:

"A" A code that describes the parent and child's business name are almost the same

"B" A code that describes the parent and child's business name are similar

"C" A code that describes the parent and child's business name are NOT similar

Extended Linkage Brand Evidence Score for source code ranging from 3 to 6:

"A" A code that describes the brand name extracted is considered to be Very Unique

"B" A code that describes the brand name extracted is considered to be Unique

"C" A code that describes the brand name extracted is considered to be NOT Unique

Extended Linkage SIC Evidence Score for source code ranging from 3 to 6:

"A" A code that describes that the parent and child share the same SIC code

"B" A code that describes that the parent's and child's SIC codes are related to each other

"C" A code that describes that the parent's and child's SIC codes are not related

Extended Linkage Location (The Physical Address) Evidence Score for source code ranging from 3 to 6:

"A" A code that describes that the parent and child are at the same location i.e. physical address

"B" A code that describes that the parent is likely to have a child in the current location i.e. physical address

"C" A code that describes that the parent is NOT likely to have a child in the current location i.e. physical address

Extended Linkage CEO Evidence Score for source code ranging from 3 to 6:

"A" A code that describes that the parent and child have the same CEO

"C" A code that describes that the parent and child do NOT have the same CEO

Extended Linkage Phone Evidence Score for source code ranging from 3 to 6:

"A" A code that describes that the parent and child have the same phone number

"C" A code that describes that the parent and child do NOT have the same phone number.

Extended Linkage Web Domain Evidence Score for source code ranging from 3 to 6:

"A" A code that describes that the parent and child have the same Web Domain

"C" A code that describes that the parent and child do NOT have the same Web Domain

Extended Linkage Person Name Evidence Score for source code ranging from 3 to 6:

"A" A code that describes that the child's business name is NOT a Person's name

"B" A code that describes that the child's business name contains a Person's first name or last name

"C" A code that describes that the child's business name contains a Person's full name.

Extended Linkage Wikipedia Evidence Score for source code ranging from 3 to 6:

"A" A code that describes the linkage relationship is suggested by Wikipedia data

"C" A code that describes the linkage relationship is not suggested by Wikipedia data

Extended Linkage Financial Report Evidence Score for source code ranging from 3 to 6:

"A" A code that describes the linkage relationship is suggested by financial statement (e.g. SEC-filing)

"C" A code that describes the linkage relationship is not suggested by financial statement (e.g. SEC-filing)

Extended Linkage Website Evidence Score for source code ranging from 3 to 6:

"A" A code that describes the linkage relationship is suggested by company website

"C" A code that describes the linkage relationship is not suggested by company website

Extended Linkage Feedback Evidence Score for source code ranging from 3 to 6:

"A" A code that describes the linkage relationship is suggested by D&B internal expert or customer feedback

"C" A code that describes the linkage relationship is not suggested by D&B internal expert or customer feedback

Out of Business Indicator - An indicator which indicates whether the company is out of business or not.

"Y" Indicates company is out of business

"N" Indicates company is not out of business

Delist Indicator - An indicator which indicates whether the company is out of business or not.

ALT Operational Global Ultimate 1 (through 6) - Alternative Linkage Operational Global Ultimate DUNS 1 (through 6).

Minority Owner 1 (through 6) – First (or corresponding number up to 6) Alternative Linkage Minority Owner

Percentage of Ownership 1 (through 6) that exists between the Case DUNS number entity and first (or corresponding number up to 6) Alternative linkage Minority Owner.

Explanation and Use of Source Code

Within the ELI model framework, Dun & Bradstreet has created Source Codes from 3-9.

The Source Codes from 7-9 indicate which type of validated Dun & Bradstreet Linkage has been applied to link the record to the family.

This code indicates the source of linkage:

o Code "9" is assigned when majority ownership linkage is present.

o Code "8" is assigned when a locally reflected relationship is present but omitted from the Majority Ownership Linkage.

o Code "7" is assigned when an Alternative linkage is present.

o Source Codes "3" to "6" are assigned whenever a modeled relationship is present.

The Source Codes from 3-6 act more like a Certainty Code indicating how sure the ELI model is that a record, not found on a Legal or Alternative Source, is truly part of the family. 3 is the lowest level of certainty and 6 is the highest level of certainty. The model errs on the side of false positives based on requested customer feedback. The reason being that it is easier and much more effective to remove a false positive than it is to source a false negative. A false positive is a situation in which a relationship was identified between two entities when none may exist.

A false negative is a situation in which a relationship should have been found between two entities and it was not found. A false positive is a situation in which a relationship should have been found between two entities and it was not found.

Explanation and Use of Evidence Scores A-C

Within the ELI framework, Dun & Bradstreet has created Evidence Scores (A-C) for each of the observed business characteristics that lead to the Source Code 3-6 assignment. This Evidence Score indicates if the characteristic of the ELI linked business is the same (A), similar (B) or different (C) than what is observed within the family tree. Those characteristics include, but are not limited to:

o Company Name
o Brand Name/Brand Uniqueness
o SIC/Line of Business
o Location
o CEO
o Phone
o Domain
o Wikipedia
o Financial Report
o Website
o Feedback

Dun & Bradstreet delivers the A-C Evidence Score on the ELI Output File and recommends these scores be used in combination with the Source Code to meet your need for balancing between coverage and accuracy. For example, if ABC Network is part of a family and many 'ABC' Company Names are identified by ELI with Evidence Score = A but the SIC/Line of Business Evidence Score = C, these ELI linked records could be rejected. These Evidence Score-related rules will likely be developed overtime once ELI is put into production and users observe patterns that are unique to your portfolios and mix of family trees.

OPERATIONALIZING EXTENDED LINKAGE INSIGHT

Extended Linkage Insight creates candidate relationships that have varying degrees of accuracy. Consider adjusting your Source Code threshold according to your tolerance for false-positives verses maximum linkage coverage. Rules can be applied to find the right balance between coverage and accuracy.

Best Practice: Extended Linkage Insight

To operationalize ELI as diligently and accurately as possible it is recommended to use a combination of auto acceptance and manual review. An immediate recommended Best Practice would be to incorporate the following rules:

Source Code	Recommendation
7-9	Autoaccept the ELI GI as Ultimate GU - validated, legal, country recommended or alternative linkage
6	Autoaccept the ELI GI as Ultimate GU
5	Autoaccept the ELI GI as Ultimate GU
4	If Legal GU is present autoaccept Legal GU for Ultimate GU until trigger based or prioritized family stewardship else leave record as is until trigger based or prioritized family stewardship*
3	If Legal GU is present autoaccept Legal GU for Ultimate GU until trigger based or prioritized family stewardship else leave record as is until trigger based or prioritized family stewardship*

* ELI is used as the starting point for manual lookup requests. Instead of trying to figure out what family an entity may be part of ELI enables the steward to just confirm the family ELI has placed it in. If the steward finds a false positive the DUNS is sent to D&B for review of false positive. D&B will update family relationship as appropriate after review.

Fields Recommended for Stewarding

When stewarding Extended Linkage Insight records for inclusion within the ELI Family it's important to keep track of the details.

- Decisioning (Accept Link/Reject Link)
- Link Rejected, Recommended Link
- Date Reviewed
- Method (Auto/Manual)
- Steward Name

Any local changes or rejections to ELI links will not be reflected in Dun & Bradstreet updates. You should maintain your own stewardship results and these results should be applied when incorporating ELI update files. Any stewardship results a customer would like to provide to Dun & Bradstreet could be potentially used to update the algorithm. Any links you steward and identify as inaccurate should be provided to Dun & Bradstreet for review and updating as appropriate.

ANALYZE RESULTS AND HIERARCHY BASELINE

Review the fill rate and completeness of your linkage hierarchies. For Corporate Hierarchy & Linkage check that any of the following codes are populated accurately and reflect the linkage expected based on the D-U-N-S populated.

Direct+ API's

- IsStandAlone
- FamilyTreeRolesPlayed.description
- FamilyTreeRolesPlayed.dnbcode
- HierarchyLevel

Flat File

- Status Code
- Subsidiary Code
- Location or Hierarchy Code
- Dias Code

For example, if the codes reflect a Branch record, then the Headquarter D-U-N-S Number should reflect a different D-U-N-S Number than the Site D-U-N-S Number.

For Extended Linkage Insight check for the following:

- There is one and only one ELI GU per D-U-N-S entity
- When a Corporate Legally linked entity there is only one ELI GU per Legal GU
- All D-U-N-S have a BRAND
- All D-U-N-S have a Source Code
- All Source Code 3-6 have Evidence Scores
- All Source Codes 7-9 do not have Evidence Scores
- All Source Code 7's have an Association Type

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 D-U-N-S Number show the same D-U-N-S Number as the standalone site D-U-N-S 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 Alternative Linkage is contractually enabled and in use, and if not, see if it is an option to add it.

5. Duplicate records with the same D-U-N-S Number

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, and they depend on the type of D&B hierarchies you are implementing. 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 Data Cloud. 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.
- Legal structure: Joint ventures will not be linked, since each company owns 50% of the stock and there is no majority ownership.

– Global 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 Dun & Bradstreet 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 Data Cloud 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 Data Cloud, and the frequency with which data is updated, a small number of records with this condition may be present.
– 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.
– Legal or Alternative: Out of Business: When it is determined that active operations are no longer being conducted at a site, the Dun & Bradstreet D-U-N-S 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 Majority Ownership hierarchies (aka legal) and Alternative Linkage views provide 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 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 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

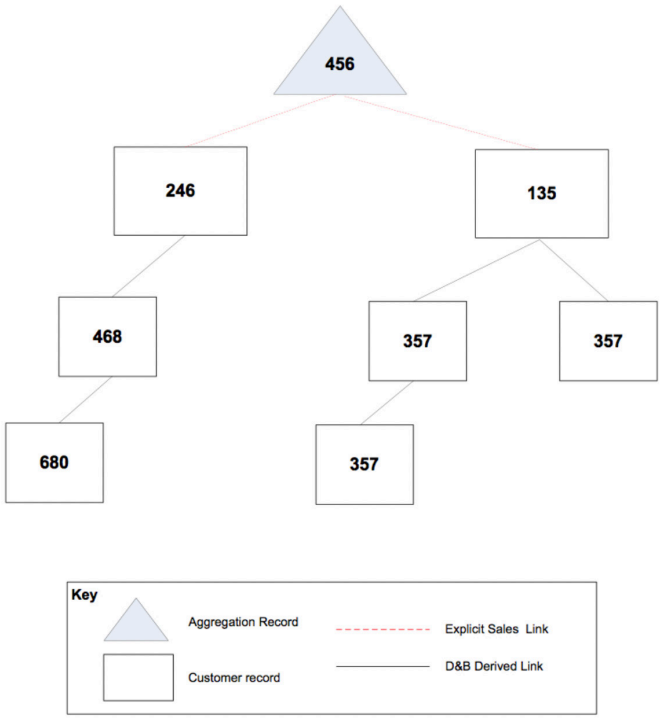
Combining Families:

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	Dun & Bradstreet 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						

Note: Under Dun & Bradstreet Provided Hierarchy HQ, DU and GU can be either Legal or ELI elements.



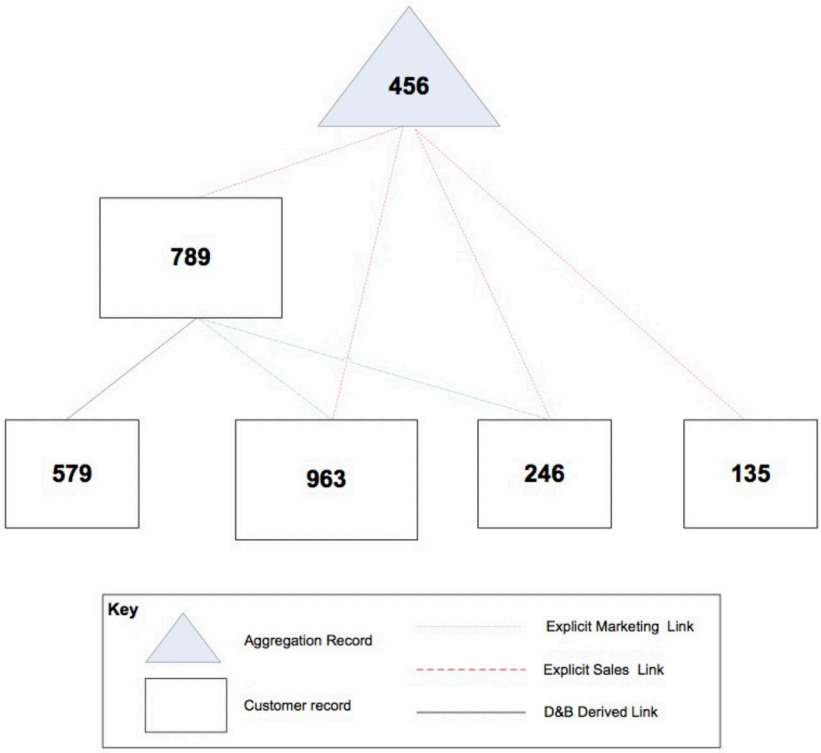
Combining Pieces of Families or Standalones:

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 D-U-N-S Numbers but in the instances where you do not have D-U-N-S Numbers or D-U-N-S 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	Dun & Bradstreet 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										
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						

Note: Under Dun & Bradstreet Provided Hierarchy HQ, DU and GU can be either Legal or ELI elements.



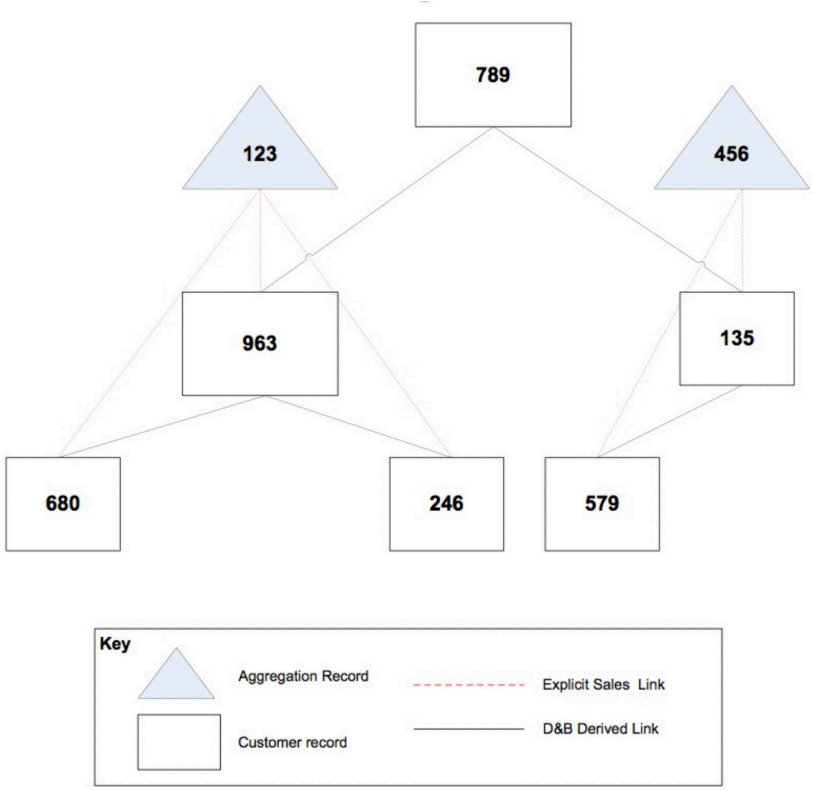
Splitting Families:

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	Dun & Bradstreet 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	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			

Note: Under Dun & Bradstreet Provided Hierarchy HQ, DU and GU can be either Legal or ELI elements.



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 Advisory 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

Corporate Hierarchy & Linkage data elements

Where available/applicable to include within your customer data model

1. Site D-U-N-S
2. Parent or Headquarter D-U-N-S & Business Name
3. Domestic Ultimate D-U-N-S & Business Name
4. Global Ultimate D-U-N-S & Business Name
5. IsStandAlone (Direct+ API)
6. FamilyTreeRolesPlayed.description (Direct+ API)
7. FamilyTreeRolesPlayed.dnbcode (Direct+ API)
8. HierarchyLevel (Direct+ API)
9. Status Code (flat file delivery)
10. Subsidiary Code (flat file delivery)
11. Location or Hierarchy Code (flat file delivery)
12. Dias Code (flat file delivery)
13. Out of Business
14. Nixie

Alternative linkage data elements

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

15. Case D-U-N-S Number
16. Case Global Ultimate
17. Linkage Structure Code
18. Franchise Type Code
19. Corporate Linkage Type
20. Operational D-U-N-S Number & Business Name
21. Op D-U-N-S Global Ultimate & Business Name

Extended Linkage Insight data elements

Where available/applicable to include within your customer data model

22. Family Brand Name
23. ELI Family Parent D-U-N-S Number, Business Name & Country
24. ELI Global Ultimate D-U-N-S Number, Business Name & Country
25. ELI Domestic Ultimate D-U-N-S Number, Business Name & Country
26. Source Code
27. Association Type
28. Name Evidence Score
29. Brand Evidence Score
30. SIC Evidence Score
31. Location Evidence Score
32. CEO Evidence Score
33. Phone Evidence Score
34. Domain Evidence Score
35. Person Name Evidence Score
36. Wikipedia Evidence Score
37. Financial Report Evidence Score
38. Website Evidence Score
39. Feedback Evidence Score
40. Legal Global Ultimate D-U-N-S & Business Name
41. Out of Business Indicator
42. ELI Source Code change
43. ELI Association Type change
44. ELI Brand change
45. Primary SIC change
46. Legal Linkage change
47. Minority Owner 1 (through 6)
48. Percentage of Ownership 1 (through 6)

Hierarchy History Table

1-48 above (if all hierarchy options are being utilized else minimize list for only options included)

49. Source of issue (Should be limited to appropriate sources including Data Steward
50. Issue
51. Issue discovered date
52. Hierarchy Data Steward review
53. Hierarchy Data Steward reviewed date
54. 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)
55. Last update date

Extended Linkage Insight Stewardship Tables(s)

When working with Extended Linkage Insight include within your customer data model

56. Decisioning (Accept ELI GU Link/Reject ELI GU Link)
57. Link Rejected, Recommended Link
58. Date Reviewed
59. Method (Auto/Manual)
60. Steward Name

Aggregation Table(s)

Where available and applicable to include within your customer data model

61. Customer ID
62. Site D-U-N-S
63. HQ D-U-N-S (ELI and/or Legal Parent/HQ)
64. DU D-U-N-S (ELI and/or Legal Parent/HQ)
65. GU D-U-N-S (ELI and/or Legal Parent/HQ)
66. Operational D-U-N-S
67. Operational GU D-U-N-S
68. Sales Aggregate ID
69. Sales Aggregate GU D-U-N-S
70. Marketing Aggregate ID
71. Marketing Aggregate GU D-U-N-S

.

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