



Creating a Customer Insights Instance

Customer Insight in a Day

YA TEH

Agile Dynamics Solution Sdn Bhd





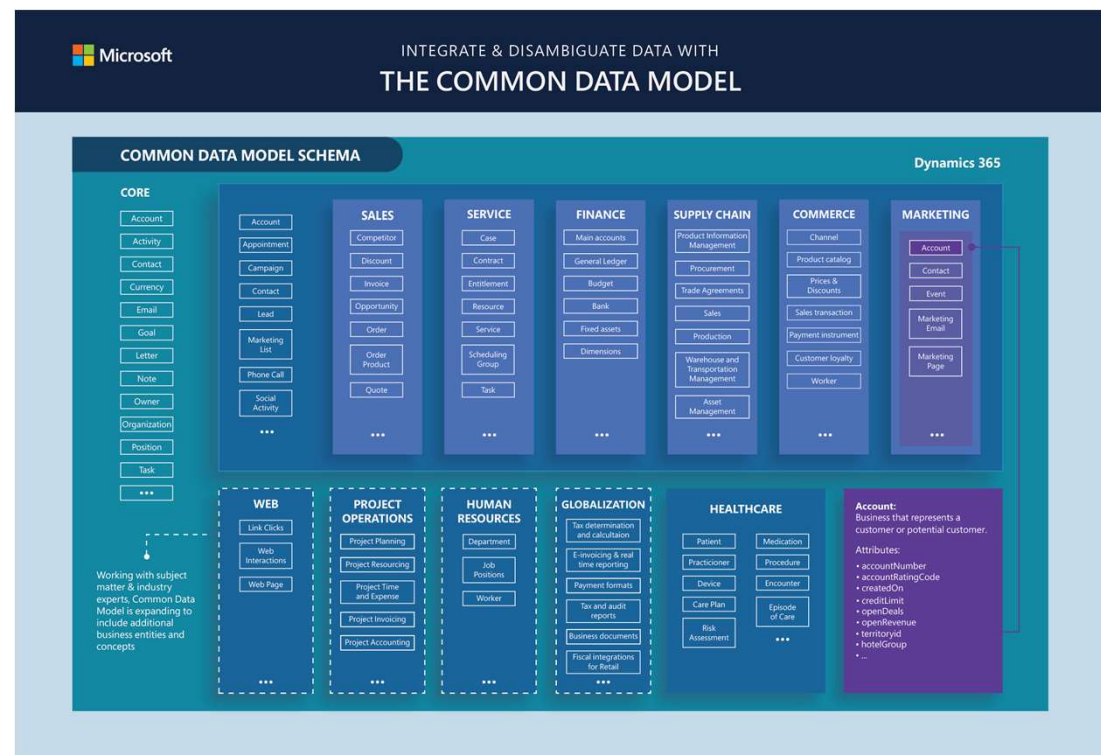
Topics

- Common Data Model
- Data Ingestion
- Data Unification
- Relationships
- Measures
- Segments
- Customers Page
- Activities
- Data Enrichment
- Intelligence

Common Data Model

Common Data Model

- Easily share data
- Standard schemas

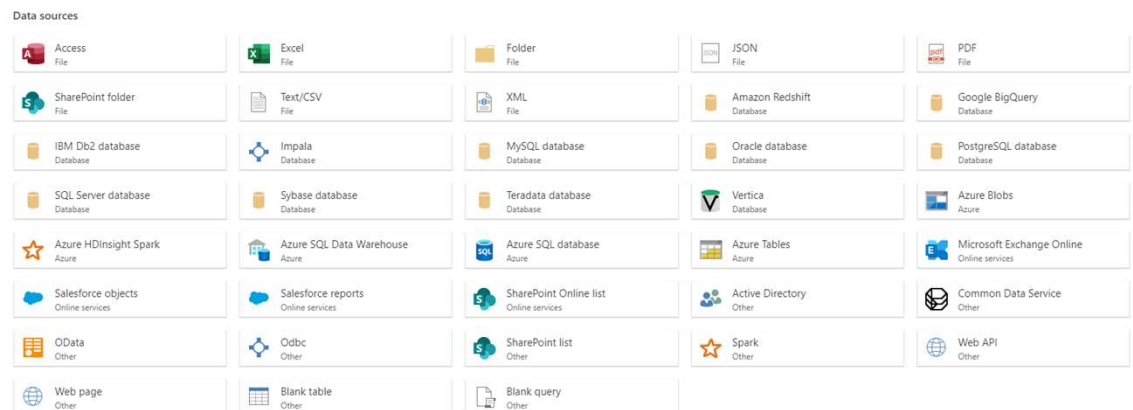


<https://docs.microsoft.com/en-us/common-data-model/>

Data Ingestion

Data Sources

- On-premises data sources are not supported - Summer '20
- Connect to a Common Data Model folder in ADLS
- Import Data using Data Flow Connectors



DataSource vs. DataSet

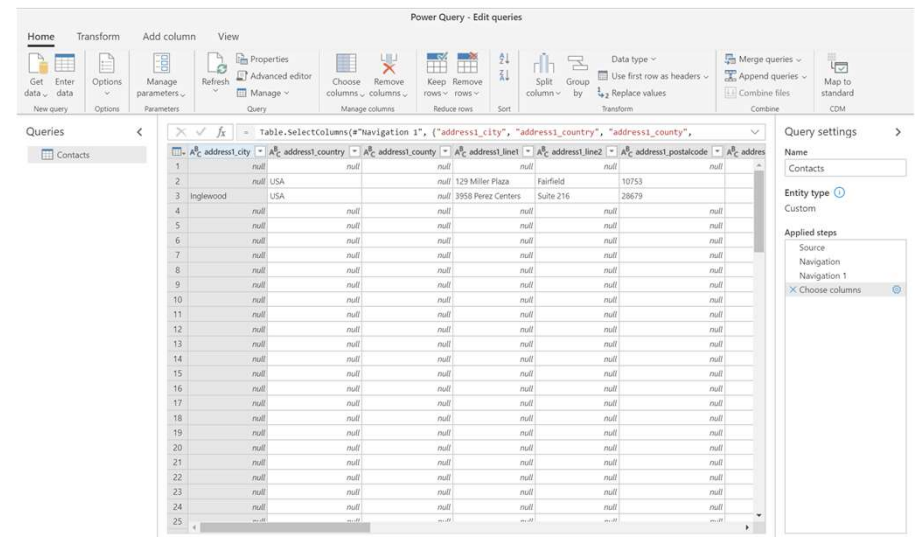
- **DataSource** - An organizational unit used to hold one or more datasets. This is purely used to organize your datasets and make it easier to group/find them.
- **DataSet** - A table of data. This can be any type of data you want to use in Customer Insights: Profile or Demographic, Transactional, etc.

Azure Data Lake

- Data in your Azure Data Lake needs to follow the Common Data Model standard. Other formats aren't supported at the moment.
- Customer Insights supports Azure Data Lake *Gen2* storage accounts exclusively.
- Data stored in an online service such as Azure Data Lake Storage may be stored in a different location than where data is processed or stored in Dynamics 365 Customer Insights. By importing, or connecting to, data stored in an online service such as Azure Data Lake Storage, you agree that data can be transferred to, and stored with, Dynamics 365 Customer Insights.

Power Query

- Power Query is used to help with importing your data sources
- You can add, review, and transform the datasets when importing

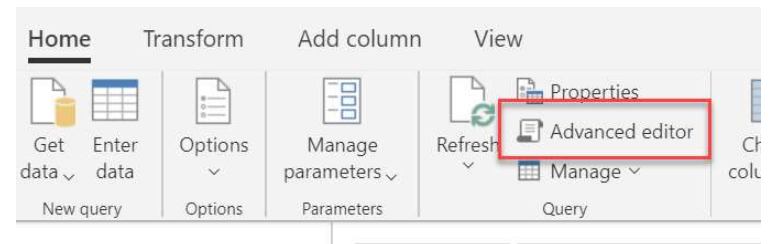


Advanced Query - 'M'

- Sometimes there are things you can't do in Power Query In that case you can use the Advanced Editor.
- Uses the 'M' formula language

Advanced editor

```
1 let
2   Source = Cds.Entities("https://jwiesedemo.crm.dynamics.com", null),
3   Navigation = Source[[Group = "entities"]][Data],
4   #"Navigation 1" = Navigation[[EntitySetName = "contacts"]][Data],
5   #"Choose columns" = Table.SelectColumns(#"Navigation 1", {"address1_city", "address1_country", "address1_line1",
6   "address1_line2", "address1_postalcode", "address1_stateorprovince", "contactid", "emailaddress1", "entityimage_url",
7   "entityimageid", "firstname", "fullname", "gendercode_display", "lastname", "telephone1"})
8 in
9   #"Choose columns"
```



<https://docs.microsoft.com/en-us/powerquery-m/>



Entities

- Each dataset you load will create an entity
- In Dynamics 365 Customer Insights, entities are considered datasets
- Multiple capabilities of Customer Insights are built around these entities

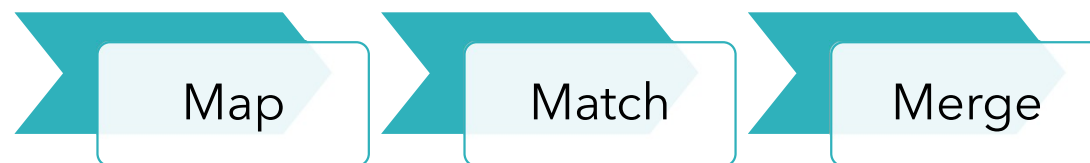
Sample Data

eCommerce Contacts	Extract of Customers who have made an online purchase
	Text/CSV
Loyalty Scheme	Extract of Customers who've signed-up for the Contoso Retail Loyalty Card Scheme
	Text/CSV
Online Purchases	Extract of purchases made via the Contoso Retail Website
	Text/CSV
POS Purchases	Extract of in-store purchase detail
	Text/CSV
Website Reviews	Online Website Reviews from online users
	Text/CSV

Data Unification

Unification Process

- The data unification process lets you unify data sources that were once disparate into a single master customer dataset that provides a holistic view of your customers, a unified customer profile. Unification stages are mandatory and performed in the following order:



Map

- *Entity selection*: Identify the combinable entities that lead to a dataset with more complete information about your customers (this should not include 'activity' information)
- *Attribute selection*: For each entity, identify the columns you want to combine and reconcile in the next data unification phases, *match* and *merge*. In Customer Insights, those columns are called *Attributes*.

Unify customer data

Map Match Merge

Define customer data in your entities by choosing the customer fields, primary key and types.

Updated: N/A

Entities		+ New entity	
Test			
Contacts			
Field name	Type	Primary key	
City	Location.City		
ContactId	ID		
Country	Location.Country		
DateOfBirth	Person.BirthDate		
EEmail	Identity.Service.Email		
FirstName	Person.FirstName		
FullName	Person.FullName		
Gender	Person.Gender		
LastName	Person.LastName		

Match

Set Match Order

- The match phase lets you specify how to combine your datasets into a unified customer profile dataset, which will be used to gain unique insights about your customers
- The match phase requires at least two mapped entities

The screenshot shows the 'Match' interface. At the top, it says 'Match' with a gear icon. Below that, it says 'Identify the unique customers in your entities by matching records of customers.' There are two boxes: 'Unique customers' showing '3004' and 'Matched records'. Below these is a 'Match order' table.

Entity	Name	All records
Primary	ContactCSV : TestData	2,000
2	WebAccountCSV : TestData	2,000
3	CallRecordsSmall : TestData	46

The 'Match order' dialog box explains the matching process. It states: 'Entities are matched in the order you set. After the first two entities, every entity matches their records to what has been identified as a unique customer.' A diagram shows 'Primary', 'Entity 2', 'Entity 3', and 'Entity 4, 5, etc.' all pointing to a box labeled 'Unique customers'. Below the diagram, it says 'Set order of entities' and 'If you include all records, every record in the entity will be a unique customer and matched to every following entity.' There are three dropdown menus for 'Primary', 'Entity 2', and 'Entity 3', each containing 'ContactCSV : TestData', 'WebAccountCSV : TestData', and 'CallRecordsSmall : TestData' respectively. At the bottom are 'Cancel' and 'Done' buttons.

Match

Set Match Rules

- At least one rule is required
- Match rules specify the logic by which a specific pair of entities will be matched
- Review and Validate your matches
- Custom Match - Allows you to specify that certain records *Always* match, or *Never* match

Edit rule

Set conditions on how you will match by choosing equivalent fields in entities.

Name *

Name+Email

You can change this later.

Conditions

Condition 1

Entity

CRM_Contact : CRMSystem

Field

Name

Entity

ERP_Customer : ERPSystem

Field

Name

Normalize

Select options

Precision level

Basic

Precision

Low

Medium

High

Exact

Merge

- View the merged attributes
- Unmerge attributes
- Add or Remove attributes to a merge
- Include or exclude attributes
- Set the Rank importance
- Reconciling of conflicting data

Profile attributes + Add merged attribute

Name	Entity	Source
CalendarDate (2)		
Attributes in CalendarDate		
Rank	Name	Entity
1	DateOfBirth	ContactCSV
2	DateOfBirth	WebAccountCSV
LocationAddressStreet (2)		
LocationCity (2)		

Relationships



What are they?

- Connect entities
- Create a graph of the data
- Help define segments and measures based on multiple data sources

Two type of relationships



Non-Editable

System relationships, created automatically



Custom

Created manually by the user

Custom Relationships

- Defined on the **Relationships** page
- One-to-Many
- One-to-One

New relationship ×

To create a new relationship, specify how two entities are connected to each other.

Name *

CustomerPurchasesEcom

Start with a letter. Use letters and numbers only.

Description

Online Purchases to Unified Customer Profile

Source details

Entity *

eCommercePurchases : eCo... ▾

Cardinality *

Many ▾

Target details

Entity *

Customer : CustomerInsights ▾

Cardinality *

One ▾

Equivalent fields

Source field *

ContactId ▾

Target field *

ContactId ▾

Measures

What are they?

- KPIs reflecting health and performance

Measures

Track your organization's performance on a bus

Display name	Type
Avg survey score	Business measure
Avg sale price	Business measure
Avg spend	Customer attribute
Total transactions	Customer attribute

Insights

Avg sale price

7,110.273

1/7/20, 7:51 AM

Avg survey score

8.391

1/7/20, 7:51 AM

3 types of Measures

Customer Attribute

A single field per customer that reflects a score, value, or state for the customer. Customer attributes are created as attributes in a new system-generated entity called **Customer_Measure**.

Customer Measure

Insights on customer behavior with breakdown by selected dimensions. A new entity is generated for each measure, potentially with multiple records per customer.

Business Measure

Tracks your business performance and health of the business. Business measures can have two different outputs: a numeric output that shows on the **Home** page or a new entity that you find on the **Entities** page.

Segments

What's a Segment



Segments provide a way to group your customers based on demographic, transactional, or behavioral attributes. You can use segmentation to target promotional campaigns, sales activities, and customer support actions to achieve your business goals.



Each segment, after processing, creates a set of customer entity records that you can export and take action on.

Types of Segments

Static

Segments that are processed only once – either after the creation or update of any of its filters.

Use static segments when properties are not expected to change over time or when they are expected to be used only once. For example, customers who attended a specific event.

Dynamic

Segments that are processed according to a recurring schedule.

Use dynamic segments when customers' attributes change over time. For example, customers who have bought products worth more than \$500 in the last three months.

Ways to build a Segment

- Segment Builder

New quick segment
Create a segment based on the number of customers with a field's value.

Condition
Attribute

Total Club Points by percentile

Group 1: Filter defined using Customer_Measure : CustomerInsights entity ⓘ

Customer_Measure : CustomerInsights ▾ Average Web Purchase (\$) ▾ greater than ▾ 138 × +

And Customer : CustomerInsights (Customer_Me... ▾ All records ▾ ×

+ And + Or

Union

Intersect

Except

Customer_Measure : CustomerInsights entity ⓘ

Customer_Measure : CustomerInsights ▾ Lifetime Spend (\$) ▾ equals ▾ Enter value ×

+ And + Or

Exporting Segments

- Export as **CSV**
- Export to **Dynamics 365 Marketing (Segments)**
- Export to **Dynamics 365 Sales (Marketing Lists)**

Customers Page

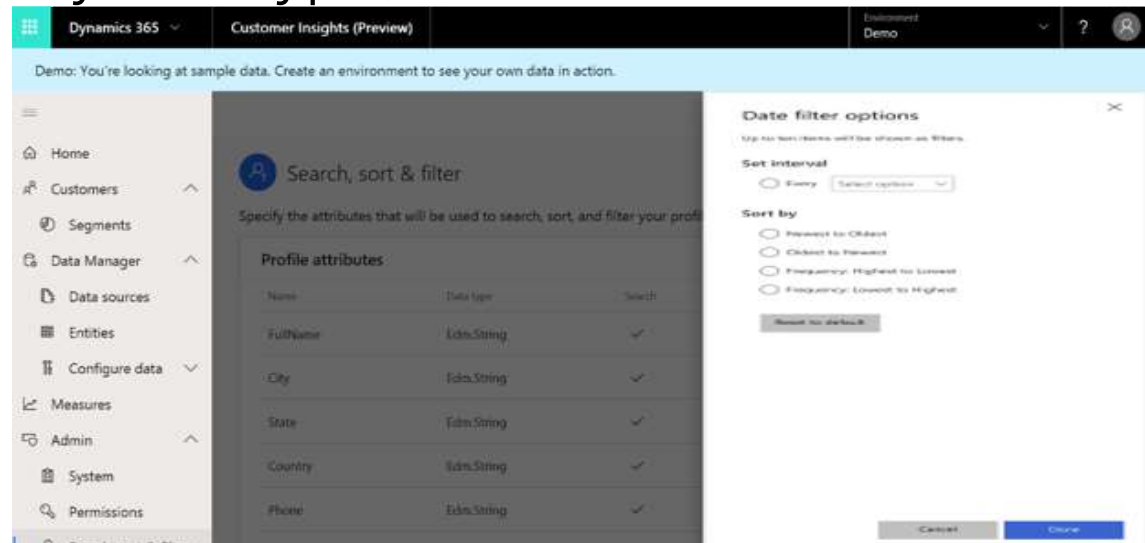


What is it?

- Consolidated view of your customers
- Available once you create the unified Customer entity
- Search and Filter
- Useful for a quick data check

Search & Filter

- Add/remove the attributes in the indexed fields list
- Add filter options (varies by field type)
 - Sort
 - # of items to show
 - Interval





What it isn't

- Customizable dashboard

Activities

What are they?

- Defined on the **Activities** page
- Specific 'thing' to track
 - Email opened, POS purchase, Website Review, etc.
- They appear on the **Timeline**
- Require at least one attribute (field) of type **Date**

Data Enrichment

What is it?

- Brand Affinity
- Category Interest
- Similar profiles to customers
- Data from the Microsoft Graph
- US Only at this time

The screenshot shows the 'Customer Insights' application window. On the left is a sidebar with navigation options: 'Customers', 'Segmentation', 'Data', and 'Analyze'. The main content area is titled 'Enrich profiles' and includes the instruction 'Include the level of customer interest for a brand or category in your profiles.' Under the 'Demographics' section, it says 'Select at least 2 profile attributes. See supported formats.' and provides dropdown menus for 'Date of birth', 'Gender', and 'Zip code (US only)'. The 'Brands and categories' section has two radio buttons: 'Choose on my own' (which is selected) and 'Industry's top brands and categories'. Below the first radio button are input fields for 'Brands' (0 / 5) and 'Categories' (0 / 5). The second radio button has an 'Industry' input field.

Demographics Matching

- **Date of Birth**

- m/d/yyyy | mmmm d | yyyy-mm-dd | mmmm yyyy

- **Gender**

- Male | Female | Unknown

- **Zip Code**

- 5-digit US ZIP Code (only supported for the US)

Brand & Category

- **Choose on my own:** This option lets you choose brands and categories of interest to get affinities for those selections.
- **Industry's top brands and categories:** For a selected industry, get the brands and interests that your customer base has the highest affinity for. *Customer base* refers to the customer profiles that are similar to the ones defined in the **Demographics** section.

MsftAudienceIntelligence entity

- Where enrichment information is stored
- The **Segment** column lists the brands and interests that were evaluated by the enrichment algorithm
- The **IndustryVertical** column lists industry the brands and interests belong
- The rest of the columns specify relative affinities to these brands and interests among profiles that are similar to your customers'. The affinity numbers represent ranks. A rank of 1 stands for the strongest affinity and the affinity decreases as the number increases.

Intelligence

Custom Models


- Azure Machine Learning Studio
 - Requires an Azure Data Lake Storage Gen 2 storage account
- Hosted as a Web Service endpoint in Azure
- Use Machine Learning to create Measures or Segments

Predictions


- Prerequisites
 - Your organization has an instance set up in the Common Data Service. Note that the credentials (user name and password) that you use in Common Data Service and in Dynamics 365 Customer Insights should match.
 - Your Customer Insights environment is attached to your Common Data Service instance
 - Production instance of Customer Insights
 - You are not using your own Azure Data Lake Gen2 Storage for CI
- Based on Fields in an Entity or when creating a Segment

TODAY


Who Knows Whom

- 


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