

# Optimise and administer your BIM 360 member subscriptions

**Adam Bear**

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# Summary

**CDE such as BIM 360 are the key to unlocking the benefits of a digital process in an assets lifecycle,  
So how do we ensure at user and business levels those benefits are maximised ?**

- about the speaker
- CDE is key to maximising the benefits of a digital process across an assets lifecycle
- the need for better account analytics
- extract member & project data from insight data
- transformation and data clean up
- managing relationships between data tables
- creating a power bi report dashboard
- reading into your reports to support members & projects

# About the speaker



## Adam Bear

Originally trained as an Architect working for Stirling winning practice AHMM, Adam is now the Strategic BIM Manager for Engineering and Sustainable Delivery, the design and construction arm within **Wessex Water**. Wessex are the only UK Water utility owner operator to also invest in house services in design and construction. We believe this is critical to giving us the best platform to implement digital engineering processes across an assets lifecycle.

# digital process benefits across asset lifecycle

## CLIENT NEED

### ALL DOCUMENTS IN A CDE

- Better Customer Service
- Lower Costs
- Lower Emissions
- Risk Management

## DESIGN

### IMPROVED COORDINATION

- Point Cloud Data
- Visualisation & Simulation
- Clash Detection
- Improved Cost Estimating

## CONSTRUCT

### REDUCED ABORTIVE WORK

- Sequencing
- Off Site Manufacture
- Faster Delivery
- H&S

## OPERATE

### ASSET KNOWLEDGE

- Better Informed
- Soft Landings
- GIS
- O&M Manuals

# Maximising Benefits

CDE is the key to unlocking the benefits of digital process in an assets lifecycle, how do we ensure at user and business levels those benefits are maximised ?

BIM 360 Account Admin Analytics provides some basic business intelligence dashboard gauges, including Member Limits by Services. This is useful in planning when you need to subscribe to more licenses but does not include other data such as when was the last time a user logged in. By using the Insight Data Extractor we can deep dive into what Projects and Members are the most active to properly engage and support both active and inactive users. Interrogating Business Units and Project Services in a visual report format is a powerful way to understand how subscriptions are being used.

# Current stage of BIM 360 implementation

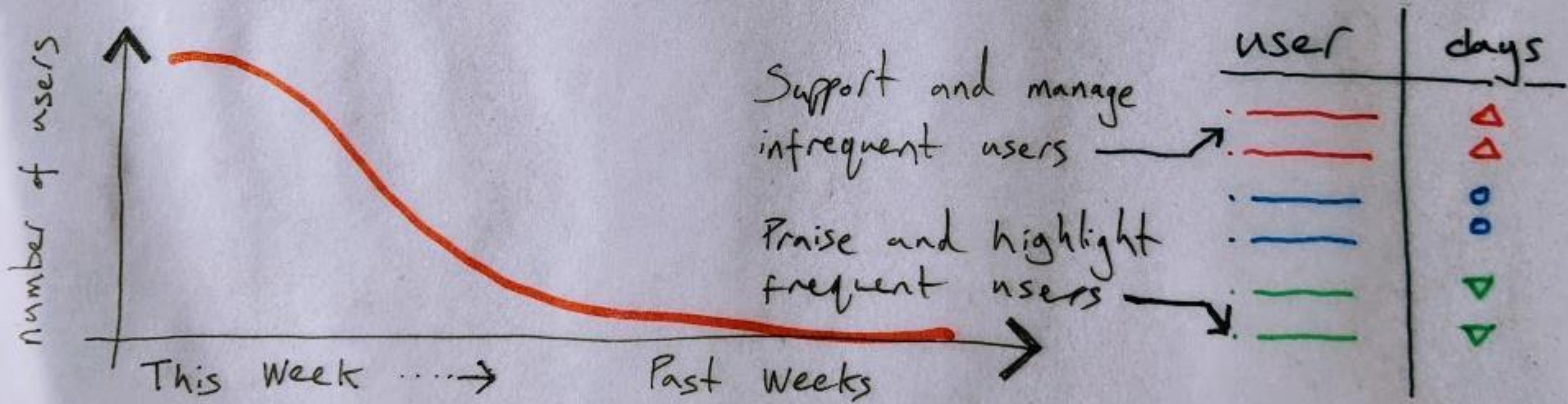


Growing number of  
Wessex and external  
consultant users have  
been invited to  
BIM360

Current subscription  
level of 85 Document  
Management Licenses

Continuously  
monitoring active  
users to inform  
subscription purchase  
decisions

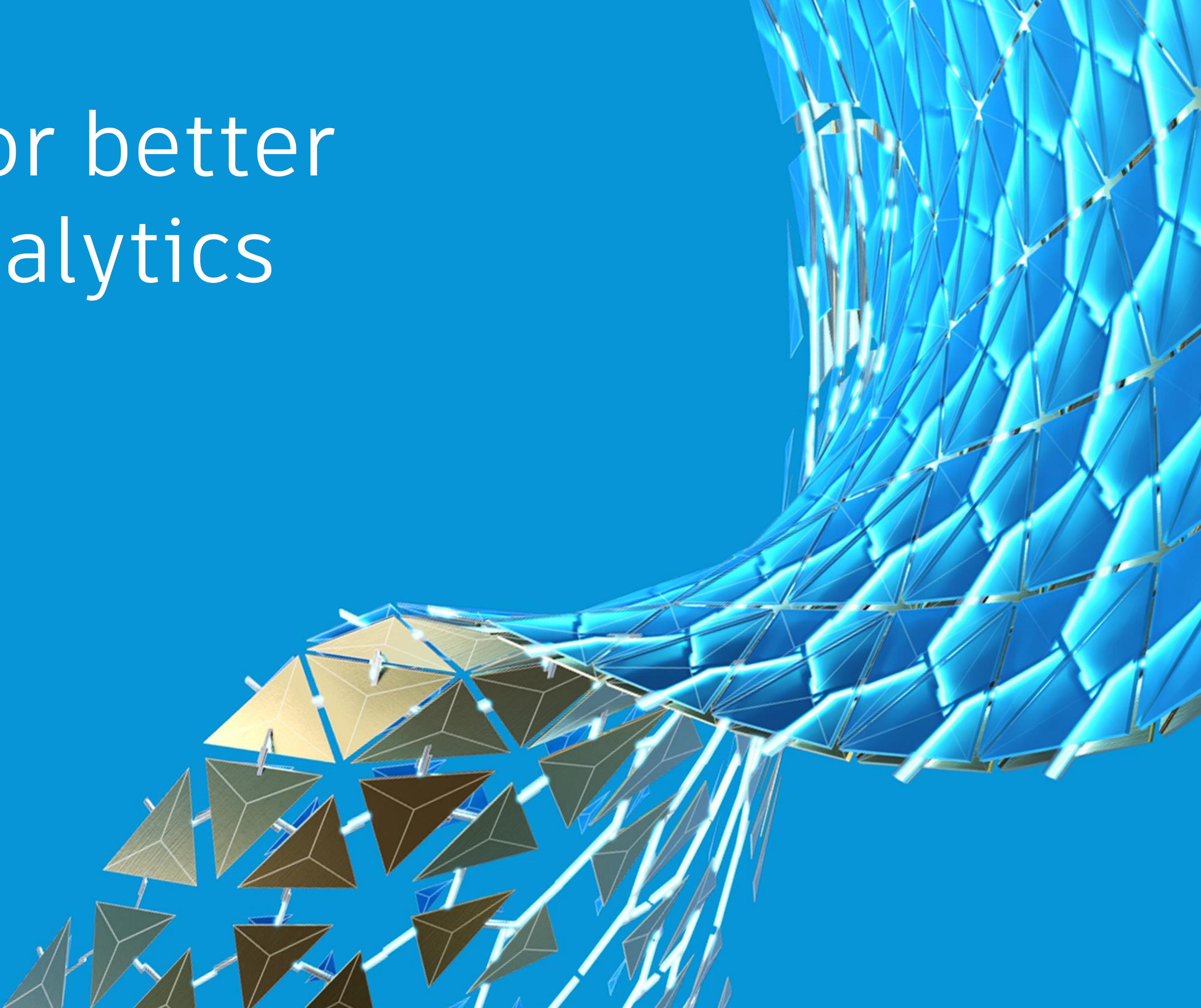
Engage and support  
pending users to  
become active



## what data do we need to manage users ?

- How many users are just active (ignoring pending) ?
- How many users have been active in each past week ?
- Who are the most and least active users, and who is no longer pending but has never signed in ?
- Which projects have the most pending users, can existing users support new ones, what will support requirements be ?
- Which users have been assigned more feature rich services, eg Build / Project Management ?

the need for better  
account analytics



BIM 360 Administration x + [admin.b360.eu.autodesk.com/admin/7d79a74e-04af-47b7-b971-fa301c0b72fc/dashboard](https://admin.b360.eu.autodesk.com/admin/7d79a74e-04af-47b7-b971-fa301c0b72fc/dashboard) ☆ ○ 🔍 🤔 🧑

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## Account Admin

PROJECTS MEMBERS COMPANIES ROLES ANALYTICS SETTINGS

### Account Admin Overview

The Account Admin Overview provides account details and member, project, and company usage metrics.

**Account Start/Renewal Date**

**27** Months remaining

Start Date: Mar 6, 2019

Renewal Date: Jan 30, 2023



**Activated Members**

**85**

Internal Company Members: 63

**Member Limits by Services**

Document Management	107/85
Project Management	20/10
Cost Management	1/1
Field Management	7/10



# The default way to understand BIM 360 usage

Account Admin Analytics such as Member Limits by Services provide a basic tool for understanding how subscriptions are being used by members working on your projects. It can help with planning when to purchase more subscriptions but lacks the detail to understand which areas of your business are getting the most benefit from BIM 360 and where more support is needed to engage with users to make sure they get the most out of the platform

BIM 360 Administration x +

admin.b360.eu.autodesk.com/admin/7d79a74e-04af-47b7-b971-fa301c0b72fc/users

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## Account Admin

PROJECTS MEMBERS COMPANIES ROLES ANALYTICS SETTINGS

### Member Directory

The Member Directory lists all members in your account, including project members. This list includes members added to the directory who have not yet been granted access to the account or any projects.

Add ▾ More Actions ▾

Email/Name ▾ Q Search by name or email

172 members	Name	Email	Status	Default Company	Last Sign In	Filters
<input type="checkbox"/>	Adam Bear	[REDACTED]	Active	Wessex Water Services Ltd	Oct 19, 2020	<b>STATUS</b>
<input type="checkbox"/>	Adam Bear	[REDACTED]	Inactive		Feb 20, 2020	Active 85
<input type="checkbox"/>	Adam Venn	[REDACTED]	Inactive	Bridges Limited	Jul 31, 2020	Pending 22
						Inactive 65

Wessex Water YTL GROUP

More Actions ▾

- Enable Member
- Disable Member
- Resend Invitation
- Export All Members

← →

## Previous method for exporting member information

The members page actually allows a more detailed drilling down of data for analysis. The Analytics page before simply showed there are 103 users, here in the members page, we can see this is made up of 85 Active and 22 Pending users. On this page we can also download some member data which was previously the only member data that was available.

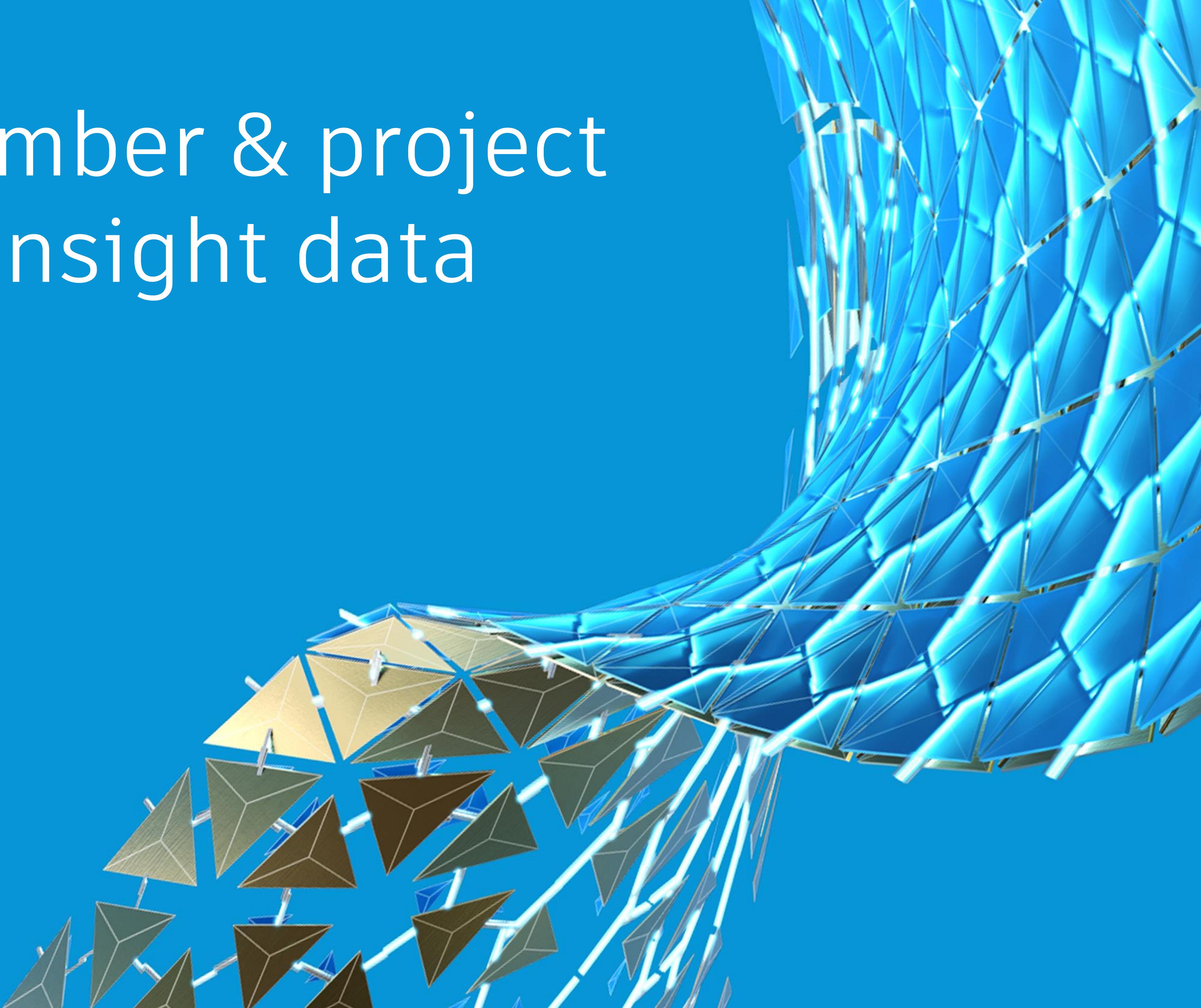
BIM360_Members - Excel											
File Home Insert Draw Page Layout Formulas Data Review View Help Search											
Get Data		From Text/CSV		From Web		From Table/ Range		Recent Sources		Existing Connections	
Get Data	Text/CSV	From Web	From Table/ Range	Recent Sources	Existing Connections	Refresh All	Queries & Connections	Properties	Clear	Sort	
Get & Transform Data											
Queries & Connections											
Data Types											
Sort & Filter											
Text to Columns											
Flash Fill											
Remove Duplicates											
Data Validation											
Consolidate Relationships											
Manage Data Model											
What-If Analysis											
Forecast Sheet											
Group											
Ungroup											
Subtotal											
Show Detail											
Hide Detail											
Outline											

# BIM360\_Members.csv

The data exported from Account Admin is fairly limited

- Email
- Account name
- First Name
- Last Name
- Default Company
- Default Role
- Project
- Status
- Last Sign in

extract member & project  
data from insight data



BIM 360 Insight x +

insight.b360.eu.autodesk.com/accounts/7d79a74e-04af-47b7-b971-fa301c0b72fc/data

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Insight DESIGN QUALITY SAFETY DATA

Data Connector Preview Run

The data connector will automatically extract data from: Account projects, Companies, Users, Roles, and Business Units as well as Project Users, Project Companies (including archived projects), Project Roles, Issues, Checklists, Daily Logs, Locations, Submittals and Cost.

Generated files are only available for **30 days** after creation

AVAILABLE EXTRACTIONS

Created
Sep 2, 2020 10:21 AM

→ Download

# Insight Data Connector

**Traditionally you have only been able to download a limited amount of data about Members from the account admin page, with details on the users status and when their last sign in was.** From this data you can visualise quantities of active pending and disabled accounts but its not linked to any of the other valuable data in BIM 360. By using the Insight Data Extractor we also have access to a wealth of data on Projects, Companies, Users, Roles, Business Units, Locations, Members, Roles, Issues, Checklists, and Logs.

 schemas	 <a href="#">admin_account_services.csv</a>	 <a href="#">admin_accounts.csv</a>	 <a href="#">admin_business_units.csv</a>
 admin_companies.csv	 <a href="#">admin_project_companies.csv</a>	 <a href="#">admin_project_services.csv</a>	 <a href="#">admin_project_user_roles.csv</a>
 admin_project_user_services.csv	 <a href="#">admin_projects.csv</a>	 <a href="#">admin_roles.csv</a>	 <a href="#">admin_users.csv</a>
 checklists_checklist_assignees.csv	 <a href="#">checklists_checklist_attachments.csv</a>	 <a href="#">checklists_checklist_item_doc_attac...</a>	 <a href="#">checklists_checklist_items.csv</a>
 checklists_checklist_items_answers....	 <a href="#">checklists_checklist_section_assign...</a>	 <a href="#">checklists_checklist_sections.csv</a>	 <a href="#">checklists_checklist_signatures.csv</a>
 checklists_checklists.csv	 <a href="#">checklists_template_item_instructio...</a>	 <a href="#">checklists_template_items.csv</a>	 <a href="#">checklists_template_items_answers...</a>
 checklists_template_sections.csv	 <a href="#">checklists_template_signatures.csv</a>	 <a href="#">checklists_templates.csv</a>	 <a href="#">cost_budgets.csv</a>
 cost_change_order_cost_items.csv	 <a href="#">cost_change_order_properties.csv</a>	 <a href="#">cost_change_orders.csv</a>	 <a href="#">cost_contracts.csv</a>
 cost_cost_items.csv	 <a href="#">dailylogs_dailylogs.csv</a>	 <a href="#">dailylogs_labor_items.csv</a>	 <a href="#">dailylogs_labors.csv</a>
 dailylogs_notes.csv	 <a href="#">dailylogs_weather_logs.csv</a>	 <a href="#">issues_attachments.csv</a>	 <a href="#">issues_checklist_mappings.csv</a>
 issues_comments.csv	 <a href="#">issues_custom_attribute_list_values....</a>	 <a href="#">issues_custom_attributes.csv</a>	 <a href="#">issues_custom_attributes_mappings...</a>
 issues_issue_subtypes.csv	 <a href="#">issues_issue_types.csv</a>	 <a href="#">issues_issues.csv</a>	 <a href="#">issues_root_cause_categories.csv</a>
 issues_root_causes.csv	 <a href="#">locations_nodes.csv</a>	 <a href="#">locations_trees.csv</a>	 <a href="#">README.html</a>
 rfis_attachments.csv	 <a href="#">rfis_category.csv</a>	 <a href="#">rfis_comments.csv</a>	 <a href="#">rfis_discipline.csv</a>
 rfis_rfi_co_reviewers.csv	 <a href="#">rfis_rfi_distribution_list.csv</a>	 <a href="#">rfis_rfi_location.csv</a>	 <a href="#">rfis_rfis.csv</a>
 submittals_attachments.csv	 <a href="#">submittals_comments.csv</a>	 <a href="#">submittals_item_cc_users.csv</a>	 <a href="#">submittals_item_co_reviewers_users...</a>
 submittals_items.csv	 <a href="#">submittals_packages.csv</a>	 <a href="#">submittals_specs.csv</a>	



# autodesk\_data\_extract.zip

A growing variety of project and account information is available in the data extract. The `Readme.html` file provides a useful index of the above schemas, contents and data types.

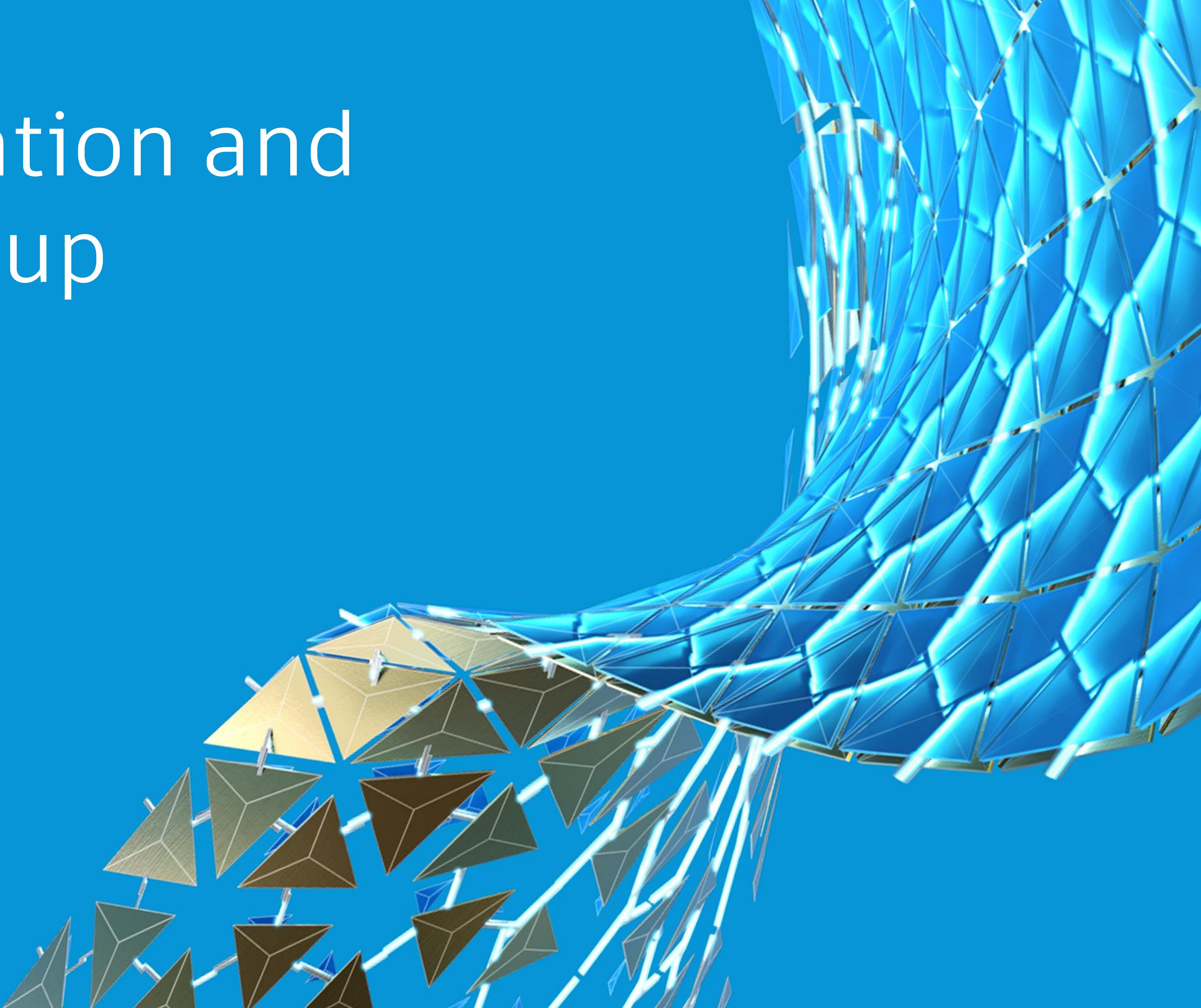
Users in BIM 360.

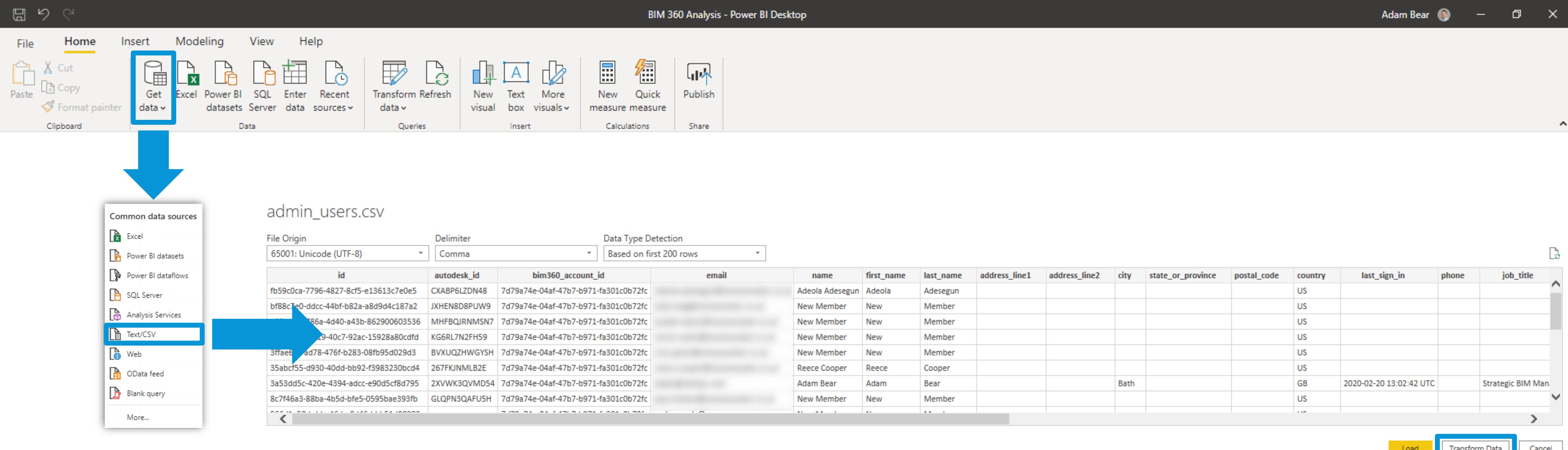
ordinal_position	column_name	data_type	constraints	notes
1	id	string: UUID		The HQ User ID
2	autodesk_id	string	Max length: 255	Autodesk User ID
3	bim360_account_id	string: UUID		BIM 360 HQ Account ID.
4	email	string	Max length: 255	Email address for the user
5	name	string	Max length: 255	Name for the user
6	first_name	string	Max length: 255	First name of the user
7	last_name	string	Max length: 255	Last name of the user
8	address_line1	string	Max length: 255	User specified address
9	address_line2	string	Max length: 255	User specified address
10	city	string	Max length: 255	City for the user address
11	state_or_province	string	Max length: 255	State for the user address
12	postal_code	string	Max length: 255	Postal code for the address
13	country	string	Max length: 255	Country for the user

## schemas\admin.html

The **readme.html** helpfile contains useful information on the content of each csv file. For example admin\_users.csv contains an text string used for the email address of the user with a maximum length of 255 characters. Understanding the data types in each data table is very important when data is transformed in Power BI's Power Query Editor.

transformation and  
data clean up





Power BI Desktop interface showing the 'Get data' step for importing 'admin\_users.csv'. The 'Text/CSV' option is selected in the 'Common data sources' list. The data preview grid shows columns: id, autodesk\_id, bim360\_account\_id, email, name, first\_name, last\_name, address\_line1, address\_line2, city, state\_or\_province, postal\_code, country, last\_sign\_in, phone, and job\_title. The 'Transform Data' button is highlighted with a blue arrow.

id	autodesk_id	bim360_account_id	email	name	first_name	last_name	address_line1	address_line2	city	state_or_province	postal_code	country	last_sign_in	phone	job_title
fb59c0ca-7796-4827-8cf5-e13613c7e0e5	CXABP6LZDN48	7d79a74e-04af-47b7-b971-fa301c0b72fc		Adeola Adesegun	Adeola	Adesegun						US			
bf88c7e0-ddcc-44bf-b82a-a8d9d4c187a2	JXHEN8D8PUW9	7d79a74e-04af-47b7-b971-fa301c0b72fc		New Member	New	Member						US			
586a-4d40-a43b-862900603536	MHFBQJRNMSN7	7d79a74e-04af-47b7-b971-fa301c0b72fc		New Member	New	Member						US			
29-40c7-92ac-15928a80cd9d	KG6RL7N2FH59	7d79a74e-04af-47b7-b971-fa301c0b72fc		New Member	New	Member						US			
3ffae8-ead78-476f-b283-08fb95d029d3	BVXUQZHWGYSH	7d79a74e-04af-47b7-b971-fa301c0b72fc		New Member	New	Member						US			
35abcf55-d930-40dd-bb92-f3983230bcd4	267FKINMLB2E	7d79a74e-04af-47b7-b971-fa301c0b72fc		Reece Cooper	Reece	Cooper						US			
3a53dd5c-420e-4394-adcc-e90d5cf8d795	2XVWK3QVMD54	7d79a74e-04af-47b7-b971-fa301c0b72fc		Adam Bear	Adam	Bear			Bath			GB	2020-02-20 13:02:42 UTC		Strategic BIM Man
8c7f46a3-88ba-4b5d-bfe5-0595bae393fb	GLQPN3QAFU5H	7d79a74e-04af-47b7-b971-fa301c0b72fc		New Member	New	Member						US			

# Power BI – importing your data

Power BI provides a simple interface that will feel familiar to anyone who has used excel, especially if you have imported data from other sources. After having selected the type of data to be imported, with BIM 360 data extractor the data format will be \*.csv, you can double check that commas are working as a delimiter in the file, and then either directly load into the Power BI report or usefully transform the data in the power query editor.

BIM 360 Analysis - Power Query Editor

The screenshot shows the Power Query Editor interface with the following details:

- File, Home, Transform, Add Column, View, Tools, Help** menu bar.
- Queries [18]** pane on the left showing a hierarchy of data sources.
- Current Query** pane showing the M code: 

```
= Table.RemoveColumns( // remove column 'last_sign_in'  
    #"Renamed Columns", {"last_sign_in"} // duplicating then removing maintains data  
)
```
- Table** pane showing a data grid with columns: **A<sup>B</sup> id**, **A<sup>B</sup> email**, **A<sup>B</sup> name**, **A<sup>B</sup> first\_name**, **A<sup>B</sup> last\_name**, and **1<sup>2</sup>3 Days**.
- Query Settings** pane on the right showing properties for the query.
- Applied Steps** pane on the right showing the sequence of transformations applied to the data, with a blue arrow pointing to the **Removed Columns** step.

A <sup>B</sup> id	A <sup>B</sup> email	A <sup>B</sup> name	A <sup>B</sup> first_name	A <sup>B</sup> last_name	1 <sup>2</sup> 3 Days
1	fb59c0ca-7796-4827-8cf5-e13613c7e0e5	Adeola Adesegun	Adeola	Adesegun	null
2	bf88c7e0-ddcc-44bf-b82a-a8d9d4c187a2	New Member	New	Member	null
3	e38cef6-786a-4d40-a43b-862900603536	New Member	New	Member	
4	4c0575ba-5b19-40c7-92ac-15928a80cdfd	New Member	New	Member	
5	3ffae66c-ad78-476f-b283-08fb95d029d3	New Member	New	Member	null
6	35abcf55-d930-40dd-bb92-f3983230bcd4	Reece Cooper	Reece	Cooper	null
7	3a53dd5c-420e-4394-adcc-e90d5cf8d795	Adam Bear	Adam	Bear	195
8	8c7f46a3-88ba-4b5d-bfe5-0595bae393fb	New Member	New	Member	null
9	566d1a58-bdde-46da-8d46-bbb51d00283e	New Member	New	Member	null
10	58b7ce79-b8d3-4ffe-9dbe-2f9dd8d51861	New Member	New	Member	null
11	bfb0393c-4fac-41f3-8215-a9de110b399d	New Member	New	Member	null
12	81026ba1-1f86-41f0-812d-151102e2793f	New Member	New	Member	null

# Power BI – Power Query Editor

Before the data outputted by BIM 360 can be used in a Power BI visual report the data needs to be transformed in the Power Query Editor. Example transformations include promoting the first data row as a header, changing the data type from a text string to a number, removing / renaming / duplicating columns, delimiting / concatenating columns, etc. Each transformation is treated as a step applied one after another in a dependent order and are created using a ribbon interface that is easy to learn.

# data transformation process

## GATHER

### PREPARE

- Define source csv file
- Promote first data row as headers
- Change data types to strings, numbers, etc

## FILTER

### LIMIT COMPUTATION

- Removing unwanted columns
- Duplicate any columns as required, eg where we are about to apply a transformation, to maintain an original copy

## TRANSFORM

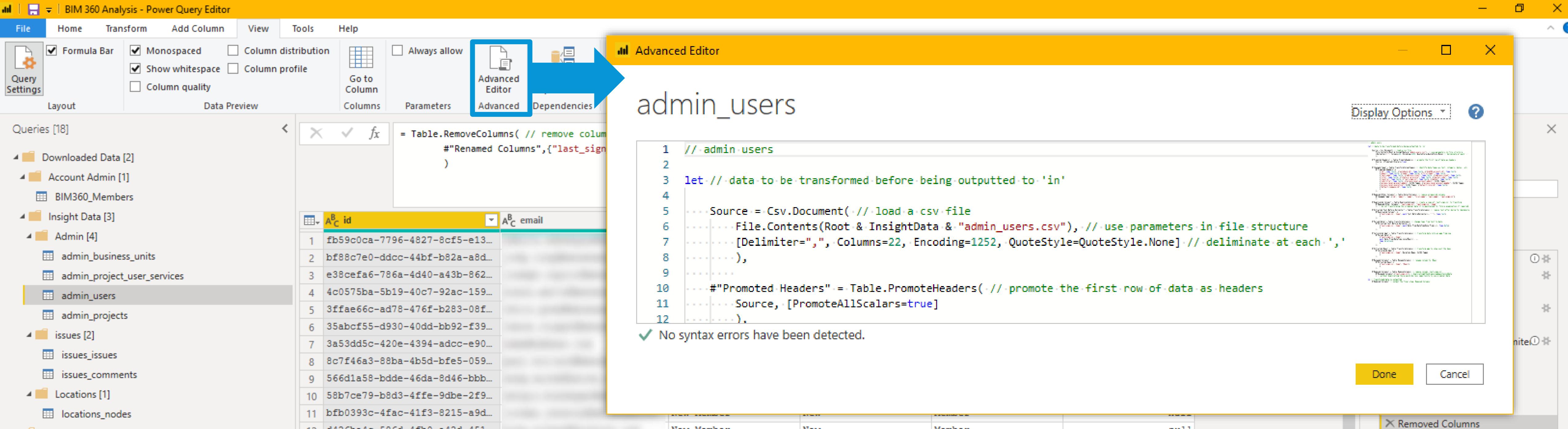
### USABLE FORMAT

- Extract text before a delimiter, eg a comma before a string of a date
- Transform the string into a date
- Calculate the difference between the date and now
- Express the date time in days only

## CLEAN

### MAINTAIN LEGIBILITY

- Rename columns to have a sensible human readable header to signifies its contents
- Remove any columns that were useful in the process of transformation but now distract from the important data



# Power BI – Advanced Editor

The power query editor provides an intuitive graphical interface for transforming data. In the background M code is generated automatically, similar to how design script is used behind dynamo nodes. In the same way it can sometimes be useful to see that code.

```

// admin users

let // data to be transformed before being outputted to 'in'
    Source = Csv.Document( // load a csv file
        File.Contents(Root & InsightData & "admin_users.csv"), // use parameters in file structure
        [Delimiter=",", Columns=22, Encoding=1252, QuoteStyle=QuoteStyle.None] // delimitate at each ','
    ),
    #"Promoted Headers" = Table.PromoteHeaders( // promote the first row of data as headers
        Source, [PromoteAllScalars=true]
    ),
    #"Changed Type" = Table.TransformColumnTypes( // identify data types as text, integers, dates , etc
        #"Promoted Headers",{
            {"id", type text}, {"autodesk_id", type text}, {"bim360_account_id", type text},
            {"email", type text}, {"name", type text}, {"first_name", type text},
            {"last_name", type text}, {"address_line1", type text}, {"address_line2", type text},
            {"city", type text}, {"state_or_province", type text}, {"postal_code", type text},
            {"country", type text}, {"last_sign_in", type text}, {"phone", type text},
            {"job_title", type text}, {"access_level_account_admin", Int64.Type},
            {"access_level_project_admin", Int64.Type}, {"access_level_project_member", Int64.Type},
            {"access_level_executive", Int64.Type}, {"default_role_id", type text},
            {"default_company_id", type text}
        }
    ),
    #"Removed Other Columns" = Table.SelectColumns( // remove unrequired columns
        #"Changed Type",{"id", "email", "name", "first_name", "last_name", "last_sign_in"}
    ),
    #"Duplicated Column" = Table.DuplicateColumn( // create a copy of 'last_sign_in' to transform
        #"Removed Other Columns", "last_sign_in", "last_sign_in - Copy"
    ), // by not transforming the original data it is maintained for future examination if required
    #"Extracted Text Before Delimiter" = Table.TransformColumns( // remove after delimiter
        {"last_sign_in - Copy", each Text.BeforeDelimiter(_, " ")}, type text
    ),
    #"Parsed Date" = Table.TransformColumns( // change type from text to date
        {"last_sign_in - Copy", each Date.From(DateTimeZone.From(_))}, type date
    ),
    #"Calculated Age" = Table.TransformColumns( // transform date into an age from now
        {"last_sign_in - Copy", each Date.From(DateTime.LocalNow()) - _, type duration}
    ),
    #"Extracted Days" = Table.TransformColumns( // transform age to show just the days
        {"Calculated Age", {"last_sign_in - Copy", Duration.Days, Int64.Type}}
    ),
    #"Renamed Columns" = Table.RenameColumns( // rename column to 'Days'
        {"Extracted Days", {"last_sign_in - Copy", "Days"}}
    ),
    #"Removed Columns" = Table.RemoveColumns( // remove column 'last_sign_in'
        {"Renamed Columns", {"last_sign_in}} // duplicating then removing maintains data
    ) // without duplicating there would be less opportunity to use original data
in // transformed data is outputted
    #"Removed Columns" // output the final step 'Removed Columns'

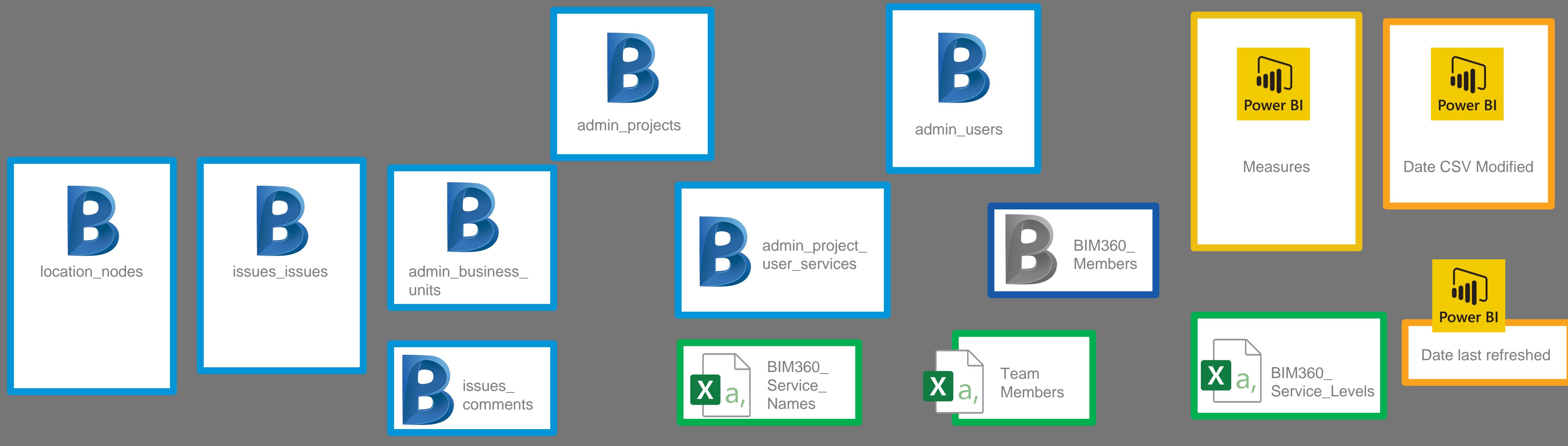
```

# M code in power bi power query editor

Once M code is used more frequently it can be useful to store it in a repository like GitHub, or worked on in an editor such as VSCode. <https://github.com/adambear82/powerBIM360/>

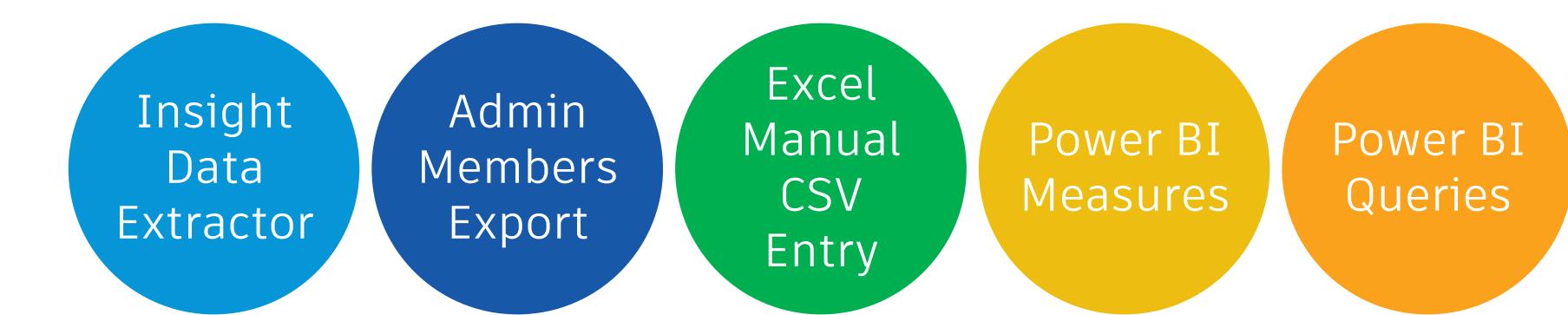
# managing relationships between data tables





# Power BI Relationship Manager

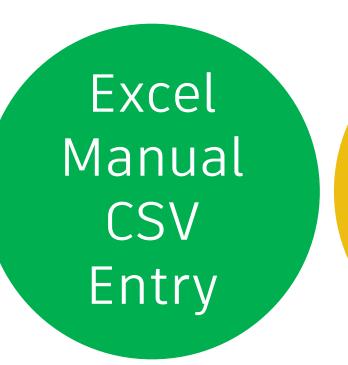
The data about the BIM360 account and its projects are stored in a variety of places or data tables. Most of the information is exported from the insight data extractor, but it is also useful to run an export from account admin members. There is some data we want to use that is not currently created in an automated export, which can be recorded in a simple CSV file. Some dashboard graphics will require a single number value, rather than a table, which we can extract using a Power BI measure. Other values, such as when a file was modified, can be found using a Power BI Query.

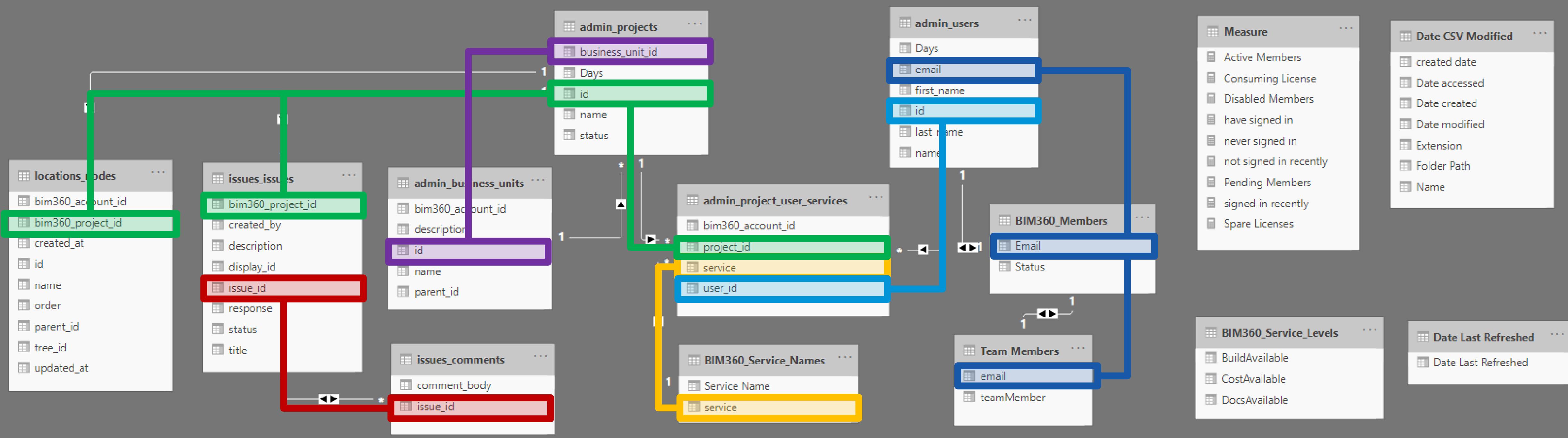




# Power BI Relationship Manager

A high value feature of dashboard reports is the ability to drill down through data subsets by simply selecting a table value. To cross reference the data between tables we need to establish the relationships between the fields in each table.





# Power BI Relationship Manager

The relationship manager allows us to understand the connections between fields in each table. For example the table 'admin\_users' is related to the table 'admin\_project\_user\_services' through the fields 'id' and 'user\_id'. This means that when selecting any user we can automatically filter the services, such as 'doc\_manager'. As a follow on step we can relate 'BIM360\_Service\_Names' so that we can present more human readable values such as 'Document Management'

<b>id</b>	<b>email</b>	<b>name</b>	<b>first_name</b>	<b>last_name</b>	<b>Days</b>
02beed56-4770-45d2-9f6c-af4171f382b5	James.Dunn@contoso.com	James Dunn	James	Dunn	7
02f3d543-52f7-4db6-9642-f0b4bb430632	New Member	New	New	Member	
09910a28-a2df-4f94-8f4c-eff66ffd015e	Thomas McMaster	Thomas	Thomas	McMaster	
0c425787-274a-4624-bfd5-bf6e26d9e312	Mark.Parker@contoso.com	Mark	Mark	Parker	20
0d2e24ee-0cd3-42b9-a384-1295748d596e	New Member	New	New	Member	
0dd6e344-e5b1-466e-97d1-d3aa5ac00b21	Adam Bear	Adam	Adam	Bear	1
1423eebd-8b24-4632-8cb2-b8e85f9a54e8	New Member	New	New	Member	
145a7477-9cb8-4efd-93a1-26741f450475	Christopher Johnstone	Christopher	Christopher	Johnstone	59
16c08a88-2daf-49b0-930c-36b9b30acd0e	simon davis	Simon	Simon	davis	57
183510ff-757b-4757-ad77-14397b48f8d3	Matt Foyle	Matt	Matt	Foyle	108
1907f504-efb9-4b5a-9572-a2c6c1bc1a8d	Claire Thomas	Claire	Claire	Thomas	8
19af5c67-4d2e-452b-a042-68a4d68d35d8	Richard Holding	Richard	Richard	Holding	
1ad77e55-d0a9-42d6-a6e1-f1baf9813e54	Nicholas Evans	Nicholas	Nicholas	Evans	8
1bda3a19-c59f-4717-9bf2-cc3d0ad0e638	martin purchase	martin	martin	purchase	
1c43a8de-21b4-4857-a825-550114777793	Richie Blake	Richie	Richie	Blake	1
...	...	...	...	...	...

## admin\_users

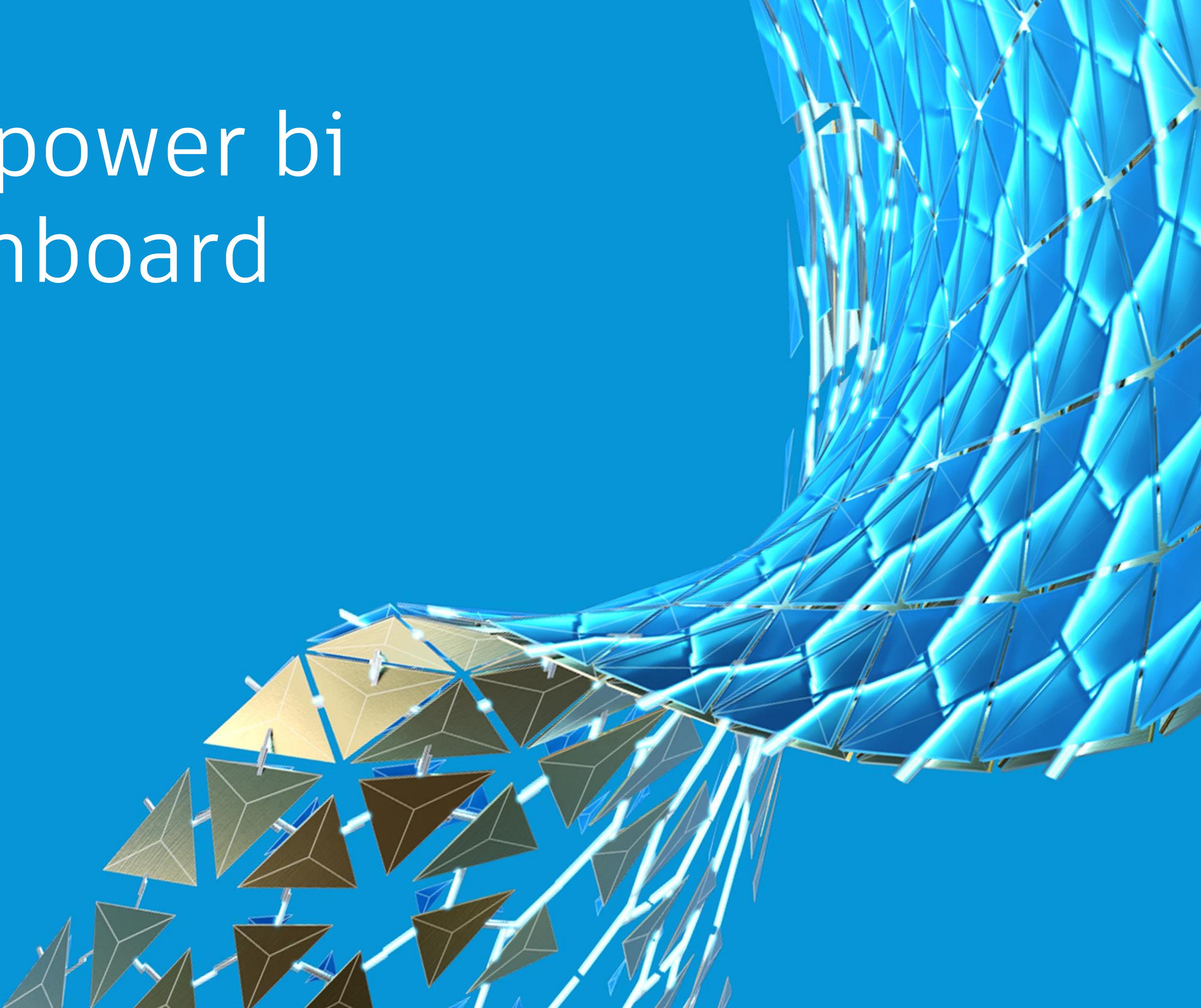
The table **admin\_users** contains a single row of data for each user. The power query editor has already been used to filter out column fields that we are not interested in and we have transformed data such as the date a user last logged in to a more meaningful how many days since last log in.

<b>project_id</b>	<b>bim360_account_id</b>	<b>user_id</b>	<b>service</b>
511d747c-624c-4316-87ce-5a64c73ef04c	7d79a74e-04af-47b7-b97	02beed56-4770-45d2-9f6c-af4171f382b5	doc_manager
88a44168-fd65-42e8-b712-8402b224f862	7d79a74e-04af-47b7-b97	02beed56-4770-45d2-9f6c-af4171f382b5	doc_manager
d78ed982-9b9e-43ce-92cd-1ed22e8a2ba9	7d79a74e-04af-47b7-b97	02beed56-4770-45d2-9f6c-af4171f382b5	doc_manager
172c23fc-27c2-44b0-a46a-e22142da6a4f	7d79a74e-04af-47b7-b97	02beed56-4770-45d2-9f6c-af4171f382b5	doc_manager
954d1ac3-7fd1-4f47-adaa-fe14ee04338b	7d79a74e-04af-47b7-b97	02f3d543-52f7-4db6-9642-f0b4bb430632	doc_manager
9b3f8220-e4cd-4c76-bce9-222fc9cf6278	7d79a74e-04af-47b7-b97	0c425787-274a-4624-bfd5-bf6e26d9e312	insight
9b3f8220-e4cd-4c76-bce9-222fc9cf6278	7d79a74e-04af-47b7-b97	0c425787-274a-4624-bfd5-bf6e26d9e312	power administrator
66f82d14-dbea-4401-a461-74d9a9866427	7d79a74e-04af-47b7-b97	0d2e24ee-0cd3-42b9-a384-1295748d596e	doc_manager
dadf712f-bfd4-4f1d-89ac-9c01d7f506fd	7d79a74e-04af-47b7-b97	0d2e24ee-0cd3-42b9-a384-1295748d596e	insight
b4283396-f788-466d-a4ad-07ad97b621d7	7d79a74e-04af-47b7-b97	0d2e24ee-0cd3-42b9-a384-1295748d596e	insight
66f82d14-dbea-4401-a461-74d9a9866427	7d79a74e-04af-47b7-b97	0d2e24ee-0cd3-42b9-a384-1295748d596e	insight
511d747c-624c-4316-87ce-5a64c73ef04c	7d79a74e-04af-47b7-b97	0d2e24ee-0cd3-42b9-a384-1295748d596e	doc_manager
5d1f3ed6-6f02-43cb-b41a-5a0e854ae989	7d79a74e-04af-47b7-b97	0d2e24ee-0cd3-42b9-a384-1295748d596e	doc_manager
0109e088-06ae-459b-8871-89e194876097	7d79a74e-04af-47b7-b97	0d2e24ee-0cd3-42b9-a384-1295748d596e	doc_manager
fca147b9-f842-4471-a638-b47363f8e724	7d79a74e-04af-47b7-b97	0d2e24ee-0cd3-42b9-a384-1295748d596e	doc_manager
7644c46f-33c0-4129-9163-e2ae97cc4265	7d79a74e-04af-47b7-b97	0d2e24ee-0cd3-42b9-a384-1295748d596e	doc_manager

## admin\_project\_user\_services

The table **admin\_project\_user\_services** contains multiple rows of data for each time a user is associated with a project or service. A user that is a member of many projects will have many rows in a table. This is a one to many relationship, and is indicated in the relationship manager as 1:\*

# creating a power bi report dashboard





## creating a report

Reports are created by dragging fields data onto the canvas, changing the visualization type and adding more data with drag and drop. Start by dragging across weeks onto the canvas, setting visualization to stacked column and ensuring weeks is the x axis value. Next drag the measures of the number of users who have not signed in recently and have signed in recently to the values. Finally drag the status into filters and filter for status is active. For extra functionality drag email to tooltips, twice, and set as the first and last value, so the tooltip can show two emails.

The diagram illustrates the connection between a Power BI data source, a visual filter, and a corresponding DAX measure. On the left, a screenshot of the Power BI 'BIM360\_Members' table shows columns for 'Email' and 'Status'. A blue arrow points from this table to a 'Filters' section in the middle, which includes a search bar and a 'Filters on this visual' dropdown. Another blue arrow points from the 'Status' column in the table to the 'Status' dropdown in the filters. On the right, a screenshot of the Power BI DAX editor shows a measure definition:

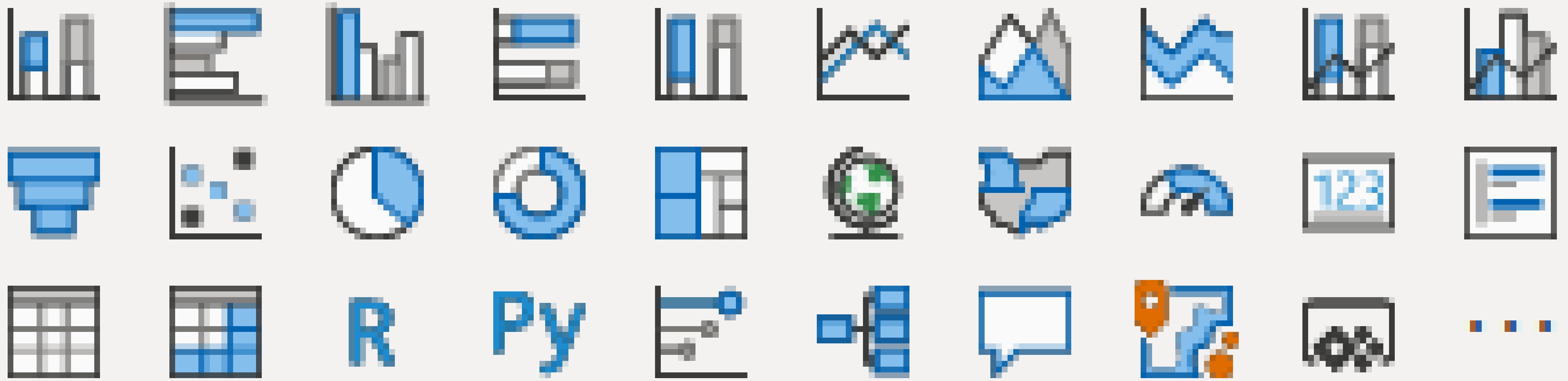
```
1 Disabled Members = COUNTROWS(  
2     // count the number of rows that are 'Inactive-Disabled'  
3     // in table 'BIM360_Members' column [Status]  
4     FILTER(  
5         RELATEDTABLE(BIM360_Members),  
6         BIM360_Members[Status] = "Inactive-Disabled"  
7     )  
8 )
```

## filtering tables

**Filter tables for simple operations.** Most of the time it's not necessary to learn how to use measures, DAX language coding adds an extra barrier. The graphical interface in Power BI provides an easy way to powerfully manipulate data tables. In some cases it can be easier to create a new query in the Power Query editor instead.

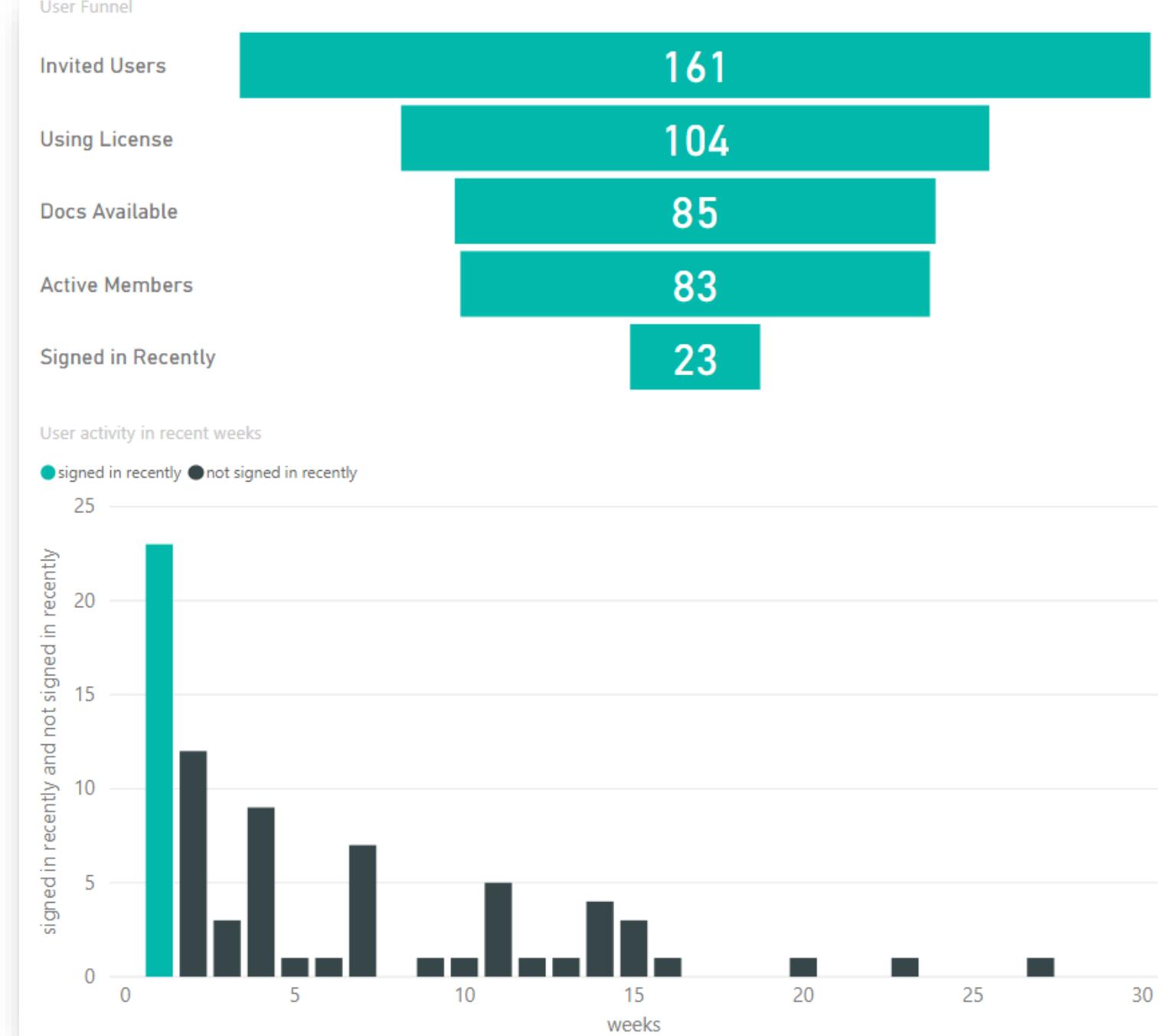
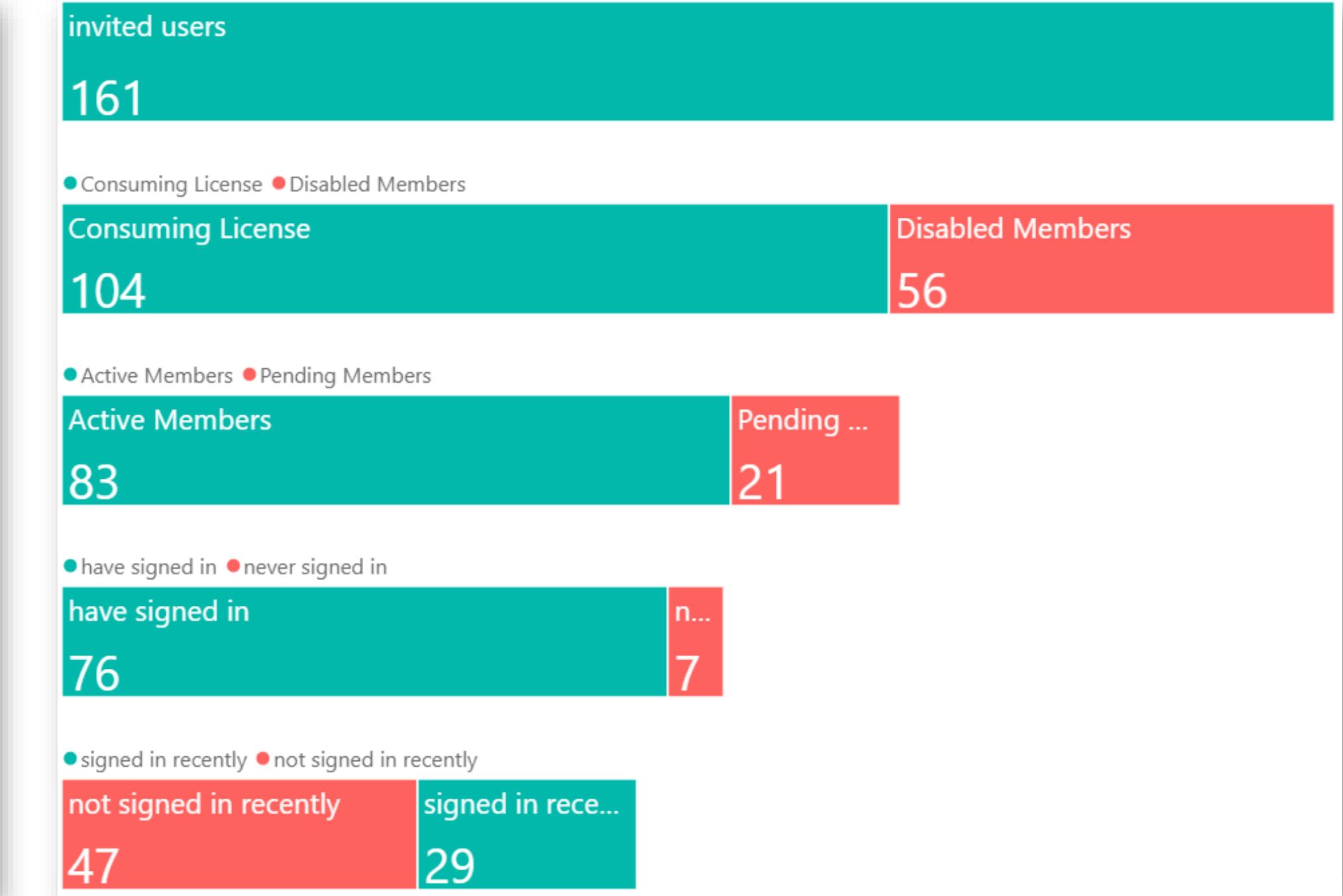
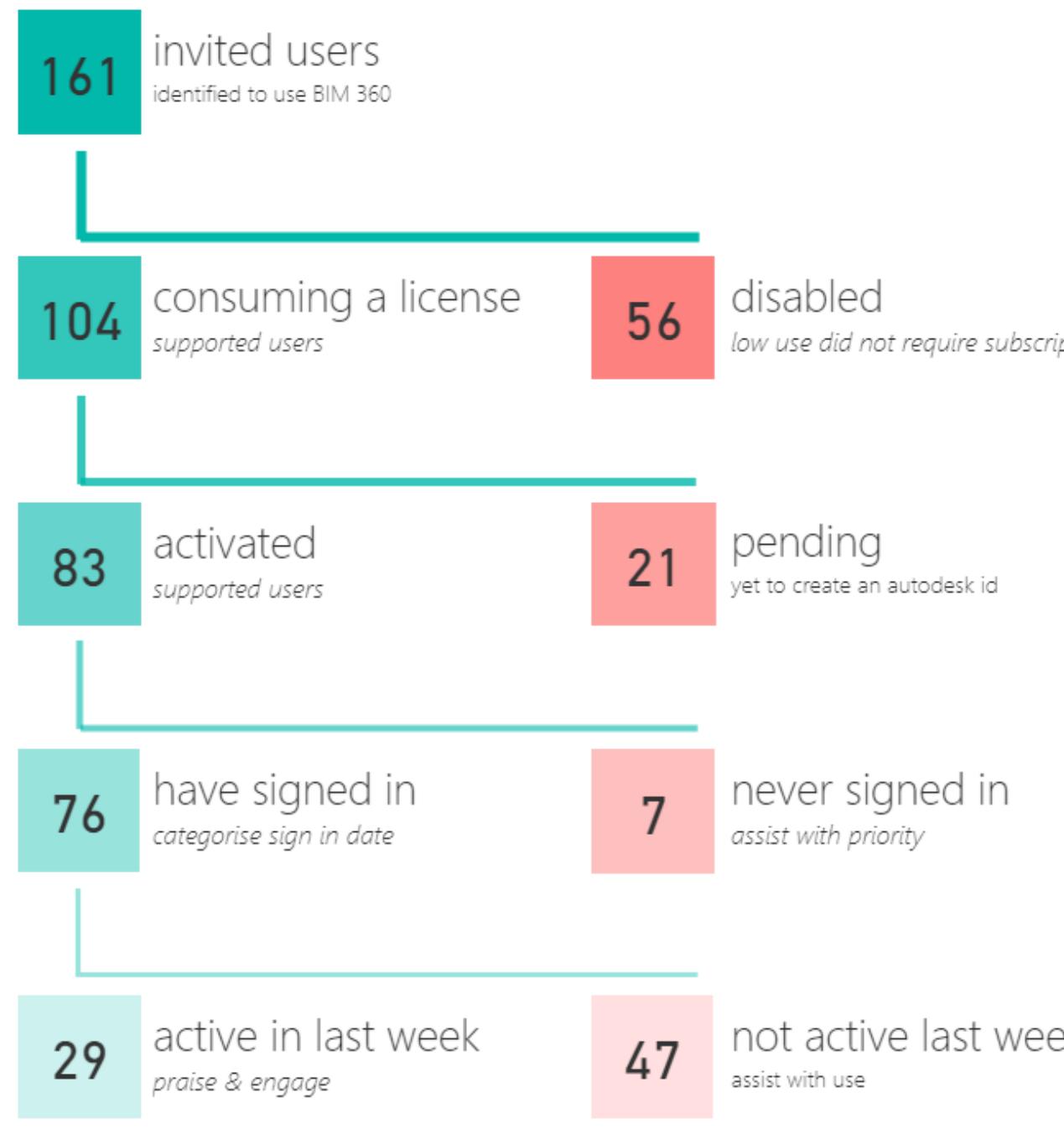
## measuring tables

**Even though it is easy to filter tables there are still good reasons to create a measure instead.** You might want to use the same measure more than once and defining it in a single place is easier than making changes to multiple filtered tables. Some measures, involving calculations, are simply not possible using table filters. Start with simple measures and build up skills.



## visualisations

Having prepared all of the data we want to visualise, now comes the fun part, selecting what types of visual to use. The same data will tell a different story depending on the visual used. A card would only show a single number which can help focus on a critical value, whereas a gauge would show that value between upper and lower limits, or a line chart might show how that value has changed over time.



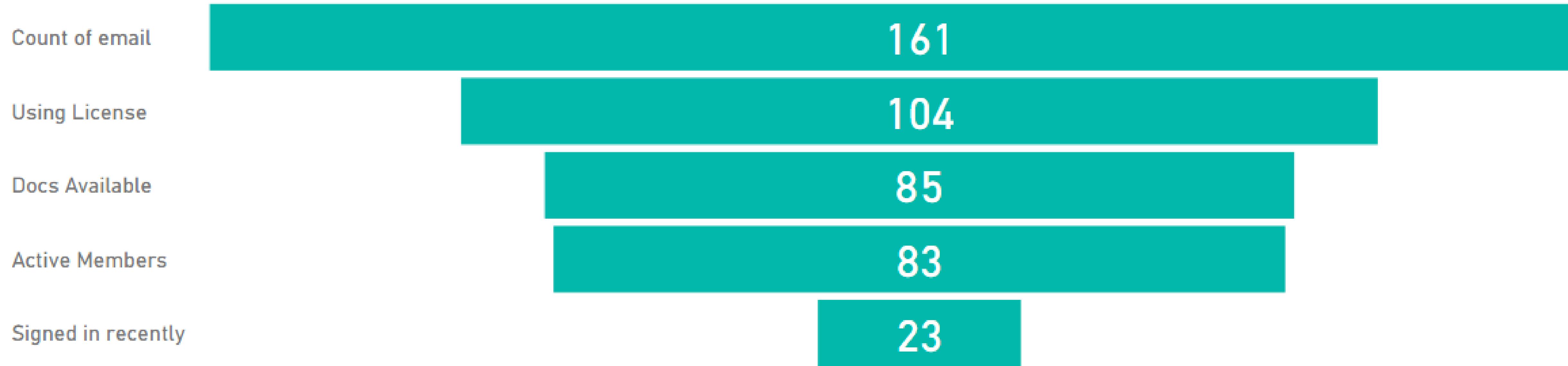
# experiment with different visuals

The mix of invited, licensed, active, deactivated, pending, and signed in users can be visualised in many different ways. The above 3 visuals all show the same data using different graphs. Cards display a single number that gives focus to a specific amount. Bar charts (and Treemaps) show multiple values in ratio to each other in context. Each stage though needs to be resized manually and is not automated. A funnel shows the relative proportion of each stage in user activity in a concise way that leaves space for deep dive of user activity in recent weeks.

reading into your reports to support members & projects



## User Funnel



## user funnel

**When determining when to purchase new licenses for BIM 360 it is important to understand the number of active and pending users.** It may be the case that instead of buying new licenses it is more appropriate to deactivate users that have not logged in for several months, or pending users that never became active.

83

activated users  
*not necessarily active*

7

never signed in  
*assist with priority*

53

least active users  
*consider removal or assist with use*

23

most active users  
*praise and engage to understand use*

Active but yet to sign in

teamMember
EPC - Consultant
ESD

Least Active Users

teamMember	Days
EPC - Consultant	71
	60
	49

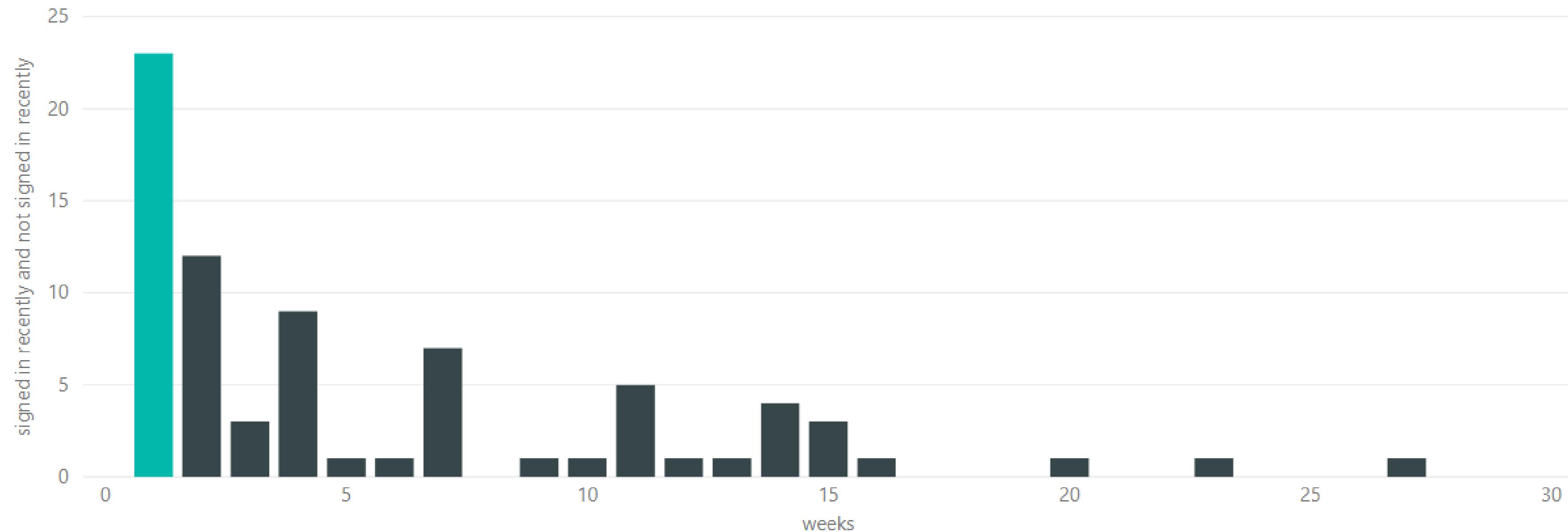
Most Active Users

teamMember	Days
BIM	2
FPC	2

# days since last sign in

The activated users seen in the user funnel, can be sub divided into those who have signed in say the last week, longer ago, or never ! This provides a useful statistic to understand how engaged the business is operating with BIM 360. Though providing training and support on BIM 360 we can increase the ratio of users who have been active in the last week. Of those who have never signed in it may be appropriate to consider if they actually require access to BIM 360 and priority training or if they were added unnecessarily.

● signed in recently ● not signed in recently



Email

Days

Days
189
156
136
109
105
100
99
95
93
93
92
86

# user activity

Recent user activity gives a quick overview of how many users are engaging with BIM 360 on a regular or infrequent basis. As seen in the user funnel anyone signing in during the last week are considered a recent user and we want this count to be as high as possible to demonstrate the health of BIM 360. Users who have not accessed recently should be as low as possible, with a decline between these two extremes. Selecting any specific week filters the table to show users who accessed that week, for possible support.

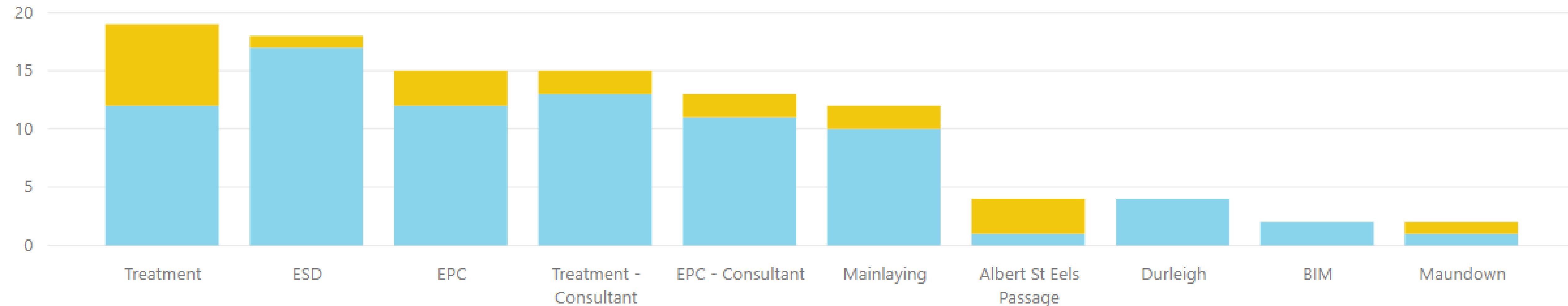
21

pending users

*will require support when joining*

83

activated users

*may be able to support pending when they activate*

## pending & activated users, categorised by team

**When adding new members to a team its useful to understand how many other activated users are in that team.**  
 teams where the ratio of pending to activated users is high will need more training and support than teams where there is already a foundation of users who can be relied upon for a some level or peer to peer support. BIM 360 does not currently provide the ability to put multiple users in team categories, and this is achieved by a manual population of a csv table linked into power bi.

## service users by project

*adjust the drop down filter to slice by service*

Service Name

Project Management



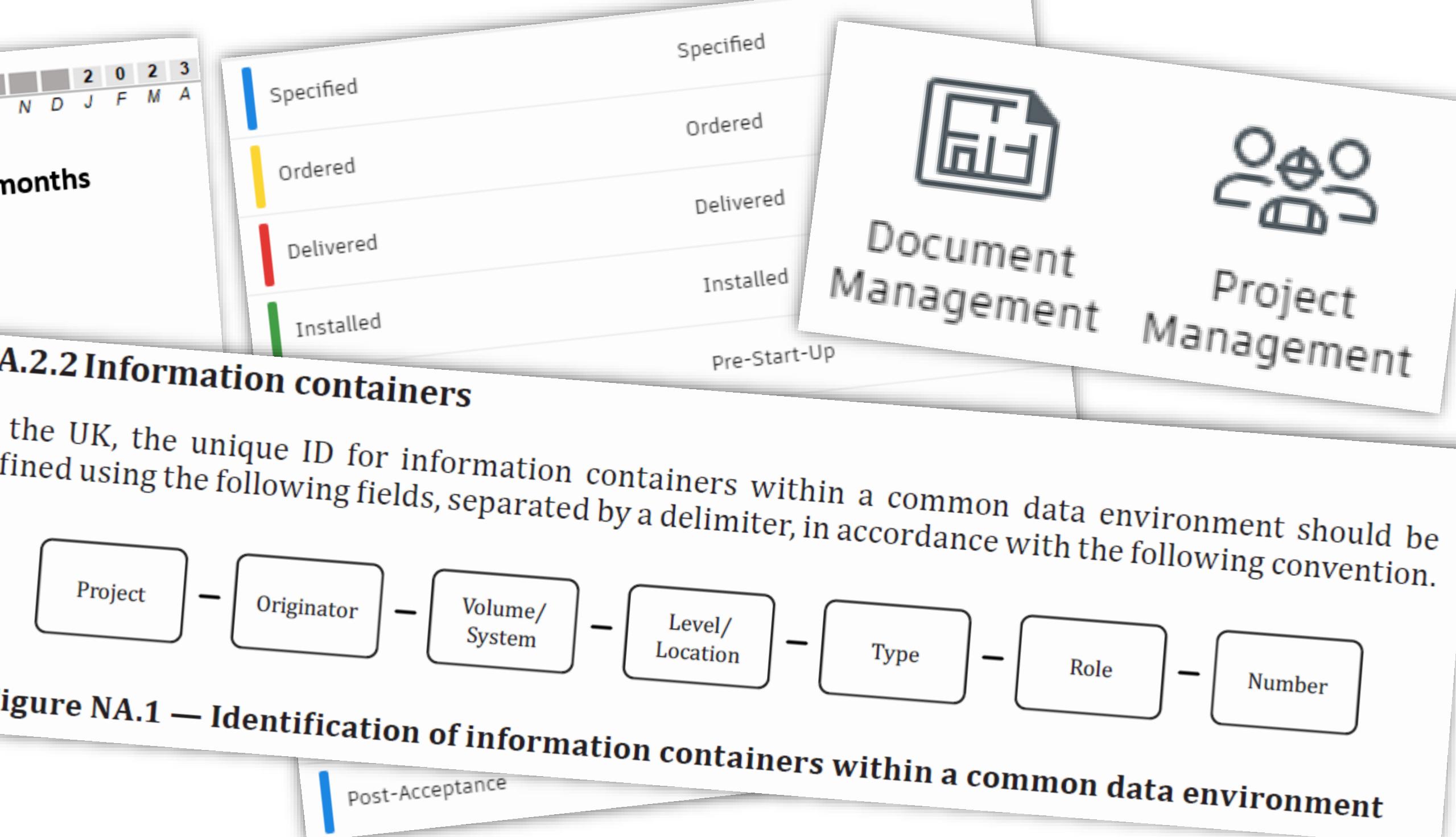
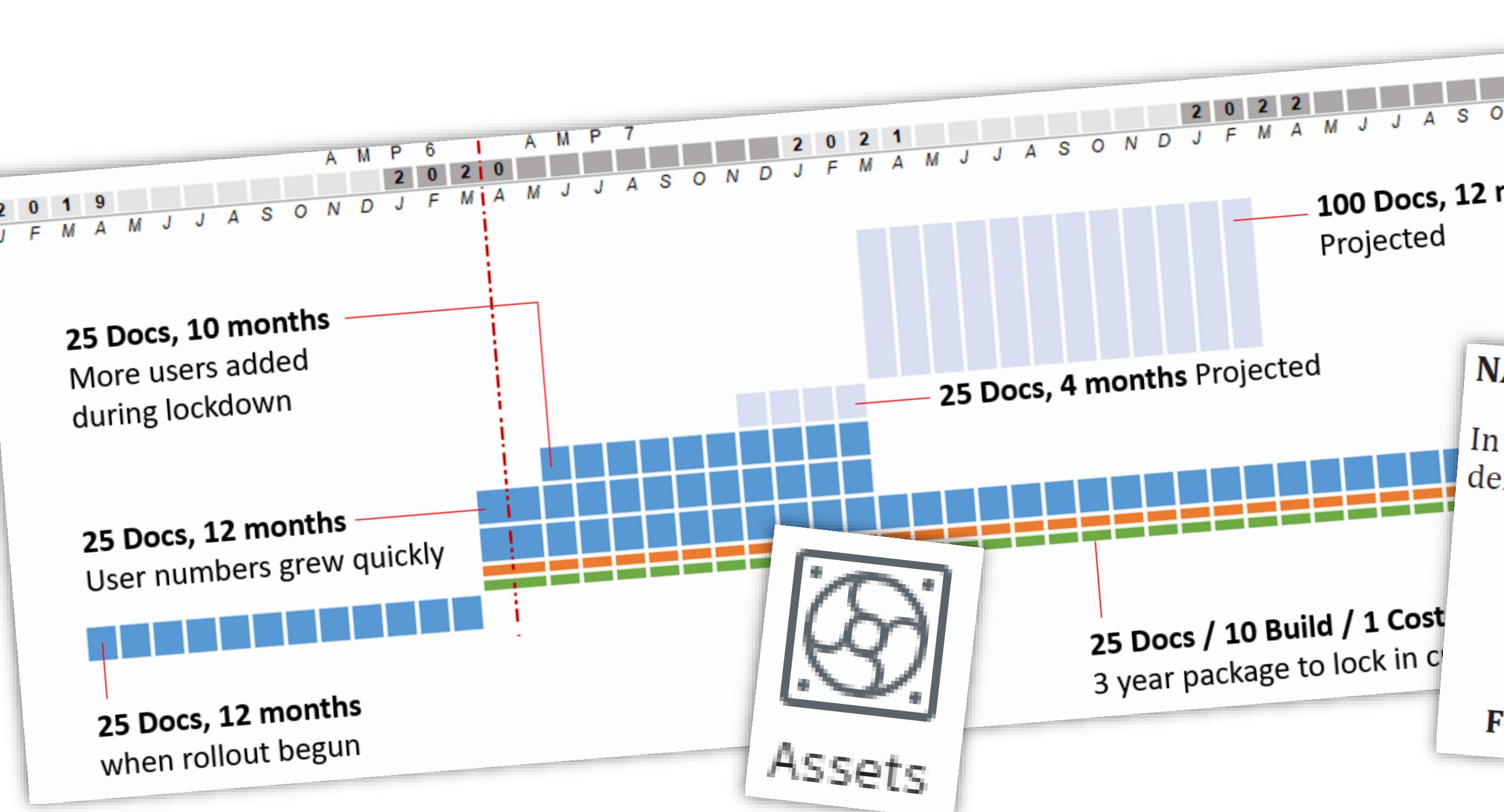
teamMember

rus Removal D9879 - Warminster STW - AMP7 Phosphorus Removal DK174 - Seven Ash WRC - Package Plant &amp; Outfall Pipe DN130 - Semley WRC Primary Tank Stanc

teamMember	rus Removal	D9879 - Warminster STW - AMP7 Phosphorus Removal	DK174 - Seven Ash WRC - Package Plant & Outfall Pipe	DN130 - Semley WRC Primary Tank	Stanc
ESD		✓		✓	
EPC - Consultant					✓
					✓

## service users categorised by project

BIM 360 Docs is the gateway service into the BIM 360 platform, its likely that you will have lower level of subscriptions for other services such as Project Management (Build). When adding new users to a project it can be easy to add users to a service they don't require based on BIM 360's automatic recommendation looking at the users role. If you have many projects it can be cumbersome to identify in which projects which users are using which services. By filtering a table it is easy to see which projects a user is applied to a service.



## outcomes and what's next

- Savings made on subscriptions that better support the business case for buying more licenses year on year
- Promote use of Project Management 'Build' over entry level Document Management 'Docs' for more users
- Promote use of Asset Management tools
- Analyse compliance with ISO 19650 for container naming to UK national annex standard



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