Name	Salesforce Reporting/Data Access Solution Recommendation
Situation	EC Members need to ensure the reports, data, and dashboards they are seeing are valid and correct. To ensure they are viewing proper data and context they should be viewing Certified reports and dashboards.
Complication	EC members typically view dashboards, but dashboards are built from Reports in Salesforce so a verified chain of data custody must be established from Object to Report to Dashboard.
Reason For this Document's Existence	To describe and align all parties and stakeholders to single plan for Salesforce Reporting.

Background: Salesforce Data Hierarchy

It is important to understand the roll up pattern that Salesforce uses in order to understand how changes at one level effect the changes at another level. In Salesforce, FIELDS of data are grouped together in an OBJECT. Then a subset of objects that have a commonality about them are grouped together to create a REPORT. Then metrics or aggregations from different REPORTS are grouped together into a DASHBOARD. In order to achieve data reliability data must be certified at the REPORT level at minimum. Even if EC stakeholders only view DASHBOARDS, if the REPORTS that make up that DASHBOARD are not certified then the DASHBOARD is not certified either.

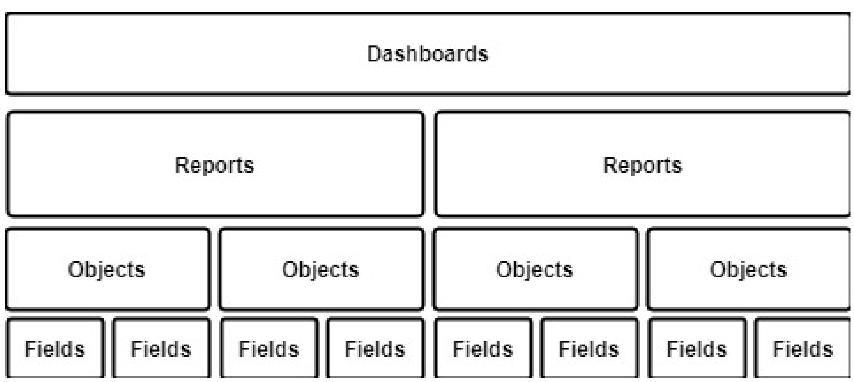

Figure 1 - Data Rollup for Salesforce's Object Model

Further since Black & Veatch has multiple rollup options-based market sectors, segmentation and multiple facility type levels, a key aspect of Data Reliability is ensuring data is aggregated the same way every time.

Reporting Inside of Salesforce

Inside of Salesforce shall be done with Salesforce Reporting and Dashboards. There are a few key concerns that need to be addressed for Inside Salesforce reporting:

- The folder structure of reports (Ease of Finding Reports in the CRM)
- The naming convention of reports (Ease of Finding Reports via Search)
- Audience Verification (Ensuring the right person is looking at the right report)
- Data Security & Privacy (Ensuring sensitive data doesn't make it to the report)

It is also critical to adoption and utilization of the CRM that users do not feel too confined and feel like they have the freedom to explore their data. This must be balanced with the need to ensure stakeholders are all looking at the same numbers. To achieve this, certain Salesforce reports should have the Certified designation. This designation works a lot like the Organic food certification. It means that the Salesforce Product Ownership team has validated that this report was built the right way and the numbers it displays can be trusted.

In Salesforce, Dashboards are built from reports. This means you can have a dashboard built from a bad report that shows bad data. Further complicating this is that the user of the Dashboard may not be able to quickly assess the data quality of the solution they are viewing. Therefore, reporting in Salesforce must also use a system of certification inheritance. Plainly stated, this means that a Dashboard can only be certified if every report and data source feeding it is also certified.

Reports and dashboards can also change or be edited over time. To ensure certification is kept up to date, certified reports must be re-certified every time a change is made to them. Salesforce has a monitoring agent inside of it that allows users to be notified on an object when it has been updated. This should be set up for all report and dashboard objects that carry the certification label.

Once reports and dashboards are certified users need to be directed to them. Salesforce has a powerful search engine inside of it, so using smart folder layouts and naming conventions of reports is the best way to ensure users find the right report quickly.

The example below illustrates the principles of Certified Labeling, Audience Identification, and the clear description of the report content and scope.

Figure 2 - Save Report Dialog with Certified Label, Audience Identification and Certified Folder Usage

As in the example, the following guidelines must be followed in naming reports.

- The certified label is always first. ALL certified reports and dashboards start with Certified.
- A space, underscore or pipe is used as a delimiter and the next piece of data included is the high-level Audience. In the example this report is a Certified Report for the EC. This ensures certified reports are grouped by audience when searching.
- The report description goes into greater detail by directly naming audience members if appropriate. This is especially important when reporting high level aggregations like Total Pipeline values to executives.
- The report description also must include the data timeframe for the report and inclusion status. Inclusion status is what the report includes and does not include. This must be clearly reported to the user. A simple example of this is a report that contains data about water opportunities but doesn’t include power opportunities

Figure 3 - The same report as Figure 2 but with an Inclusivity Clarification added

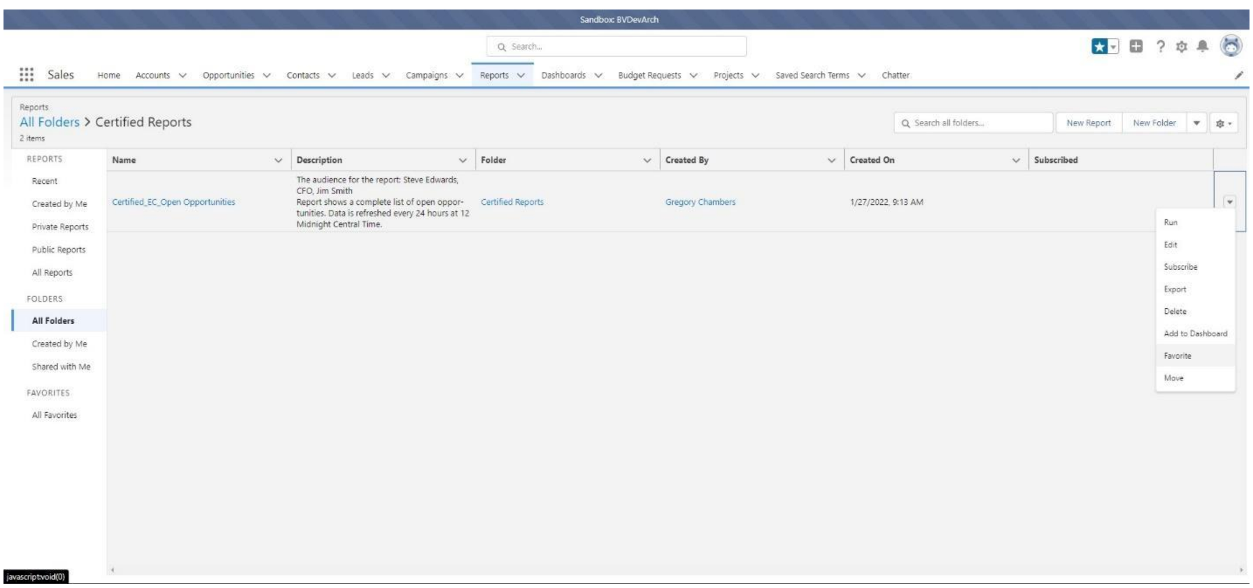

Figure 4 - When in normal list view following good folder and naming conventions makes it easy to find what you are looking for

Finally, one of the best ways to ensure users get the data they need is to send it to them. This is especially true of executives. Salesforce reporting has a robust subscription engine that can do time and data driven subscription deliveries. While not required, this can be easy way to ensure executives stay up to date on Salesforce data without having to be in Salesforce 24/7.

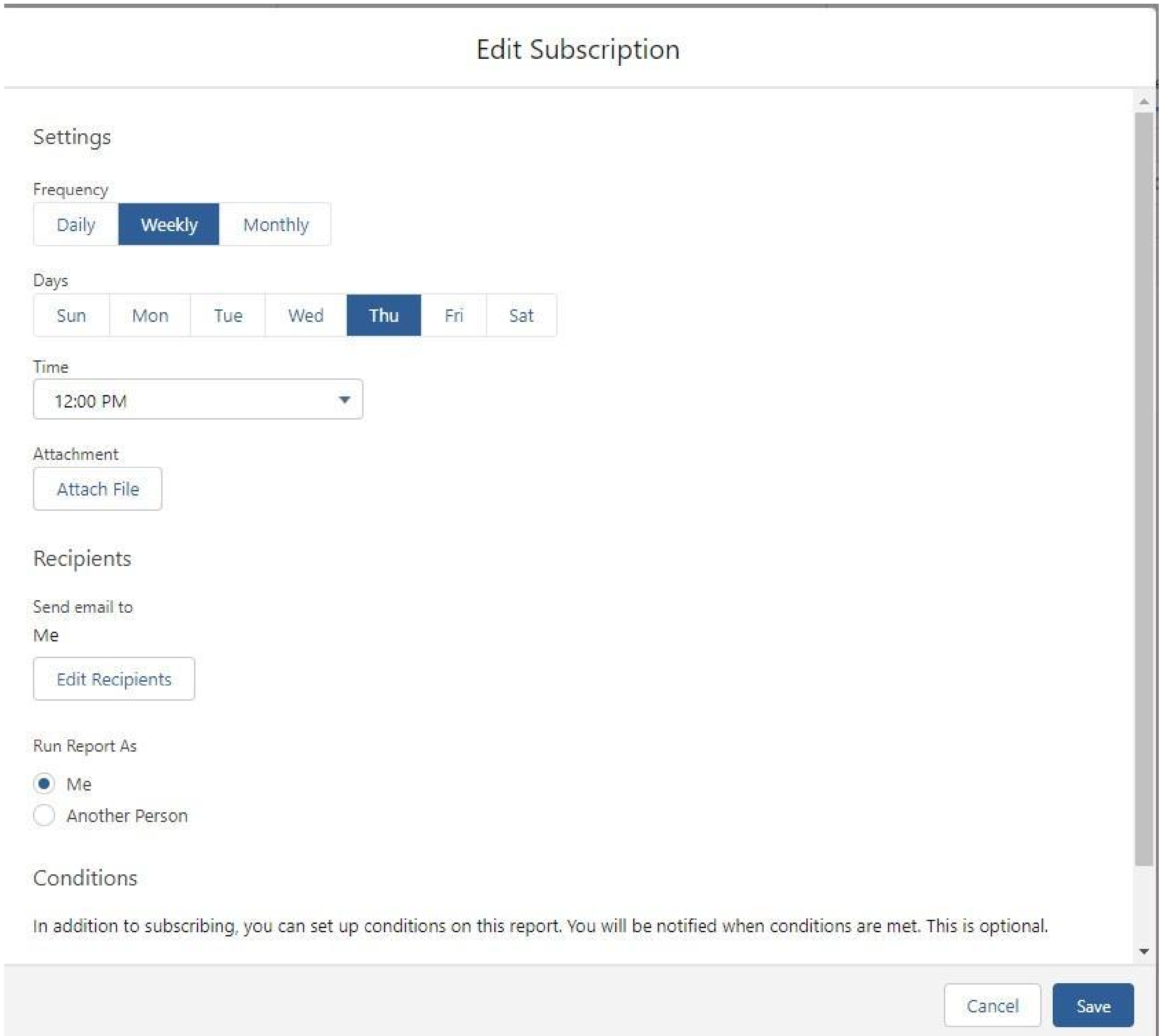

Figure 5 - A simple report subscription based on time. IE..Send this report to Mary every Thursday at noon

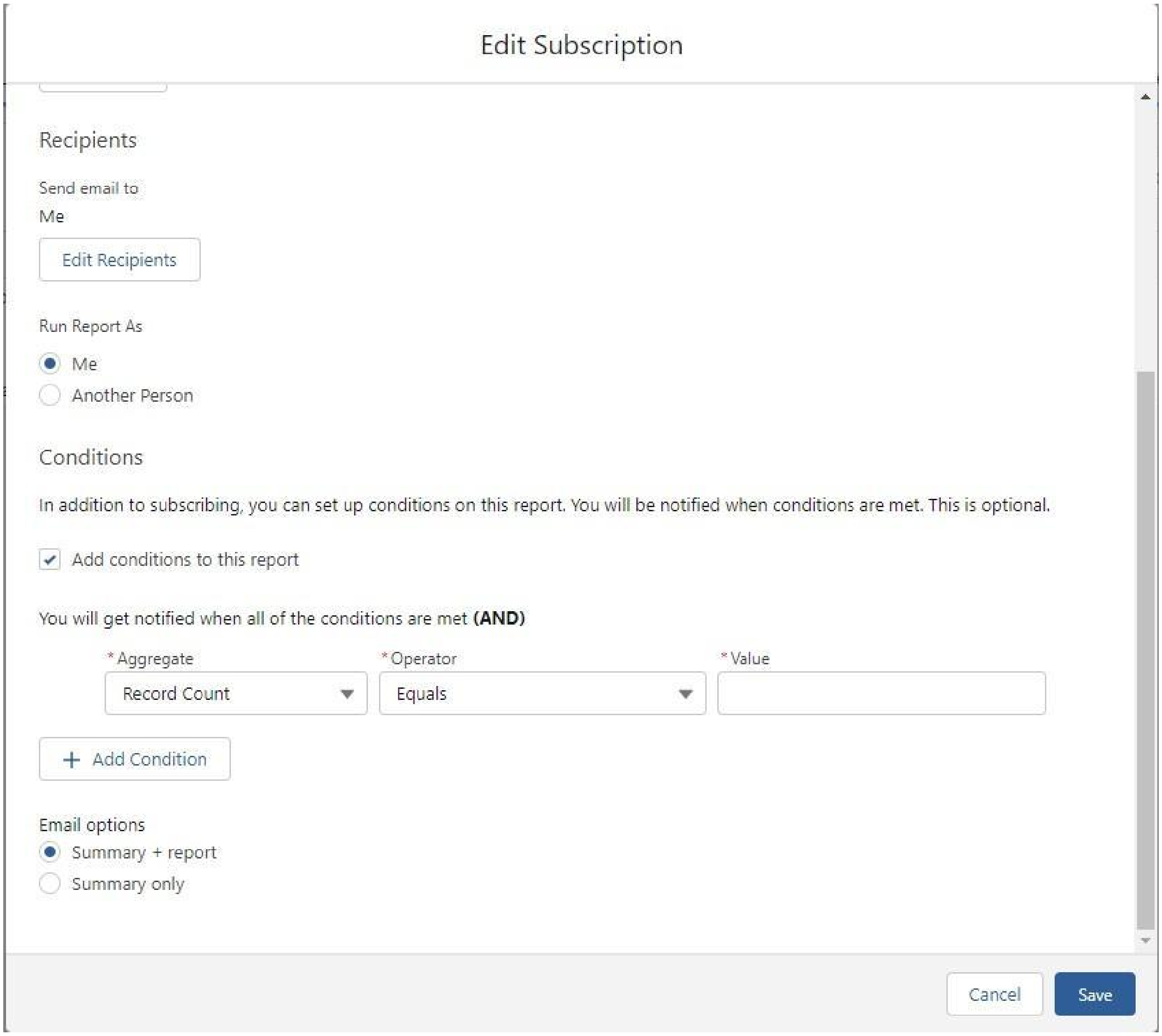

Figure 6 - Conditional report subscriptions. These send a report to person or persons when data crosses a certain threshold. IE Send this report to the CIO when more than 90% of users login during the week

Reporting Outside of Salesforce

Sometimes, users want to do some reporting outside of Salesforce in tools such as Power BI or Microsoft Excel. This use case also leverages a well set up reporting structure. All Microsoft interfaces include the ability to import a Report instead of an object to Power BI or Excel.

All external API access for User IDs that are not associated with an integration should be removed. Further API access should only be allowed for Certified Reports. This ensures that only certified datasets leave Salesforce and provides a linkage between a user viewing a report in Salesforce, viewing a Data Subscription from Salesforce and viewing a 3rd party tool like Power BI.

In most cases this means that a Report inside of Salesforce will need to be created for each reporting use case outside of Salesforce.

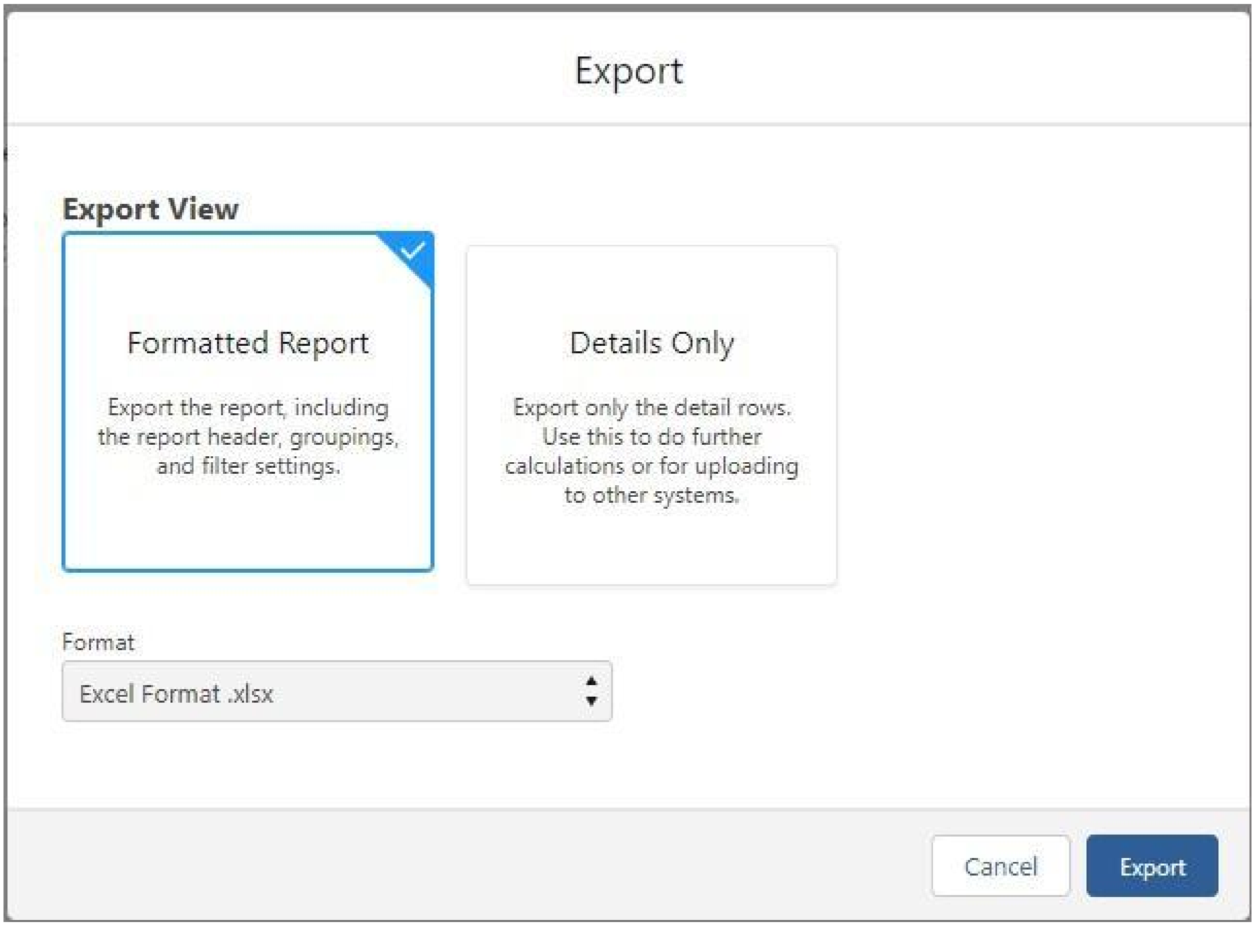

Figure 7 - Exporting a Certified Report in Salesforce

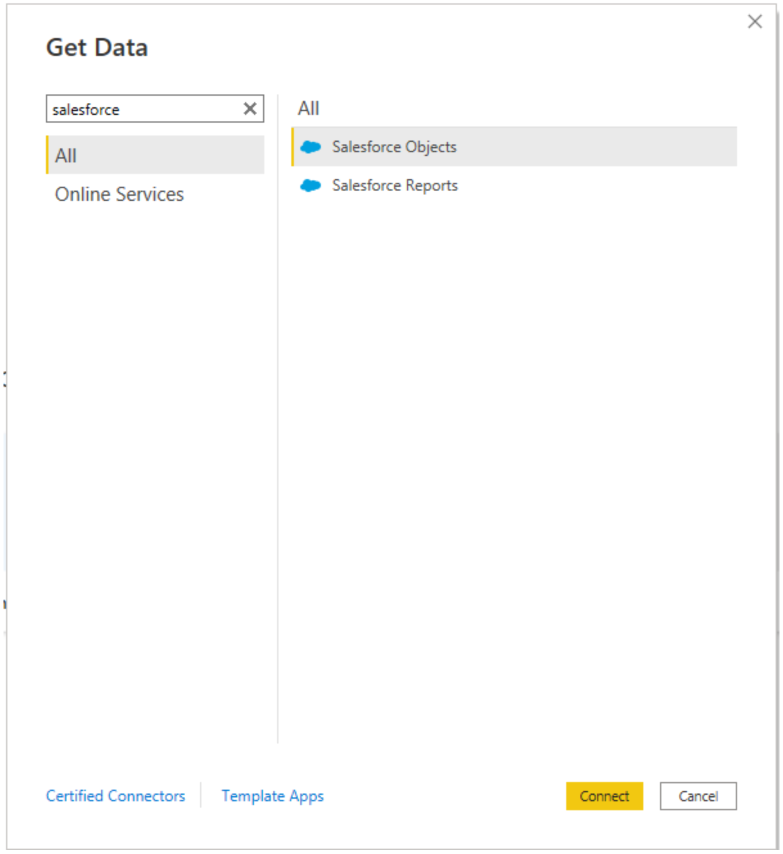

Figure 8 - Microsoft Power BI dialog box to connect to Salesforce Reports and Objects. Salesforce Object access via this method should be blocked by Salesforce permissions

Bulk Data Access

Salesforce Reports has a built in row limit of 2000 records. This means no Salesforce report can contain more than 2000 rows in it. There are use cases that exist for using more than 2000 rows at a time. These use cases are called Bulk Data Access use cases. These use cases must have data sent through Informatica where proper data obfuscation can be done. Bulk data access should be limited to systems only and should not be used for reporting purposes.

Each request for bulk data access must be documented and approved by the Salesforce Product Owner team, Security, and the CTO's office. An SLA of around 30 days should be planned for that Bulk Data Request Review to happen.

Implementation Steps

ID	Type	Description
1	SFDC-Support Task	Layout Folders in a commonsense way for users including certified folders
2	SFDC Product Ownership	Determine first batch of certified reports for certification

3	SFDC-Support Task	Name first batch of certified reports using naming convention and place into certified folders
4	SFDC Product Ownership	Sign up stakeholders to Data Subscriptions to ensure the right data comes to them.
5	SFDC-Support Task	Remove all permissions for individual users to access Salesforce Object Data via API
6	SFDC-Support Task	Lockdown API permissions to only access Salesforce Report Objects in Certified Folders.

Solution Alternatives

None