Blackbaud CRM™
DEVELOPERS' CONFERENCE

Blackbaud Data Warehouse: Reporting and Analytics

- Tanweer Alam
- University of Illinois Foundation

Topics

- Legacy System
  - Environment and Architecture
- Blackbaud CRM and Blackbaud Data Warehouse Implementation
  - BBDW Architecture - Extending the out of box BBDW data structures
- Reporting and Analytical customizations
  - Deploying Reports and Ad hoc query marts in CRM.
  - Tableau Implementation in CRM.

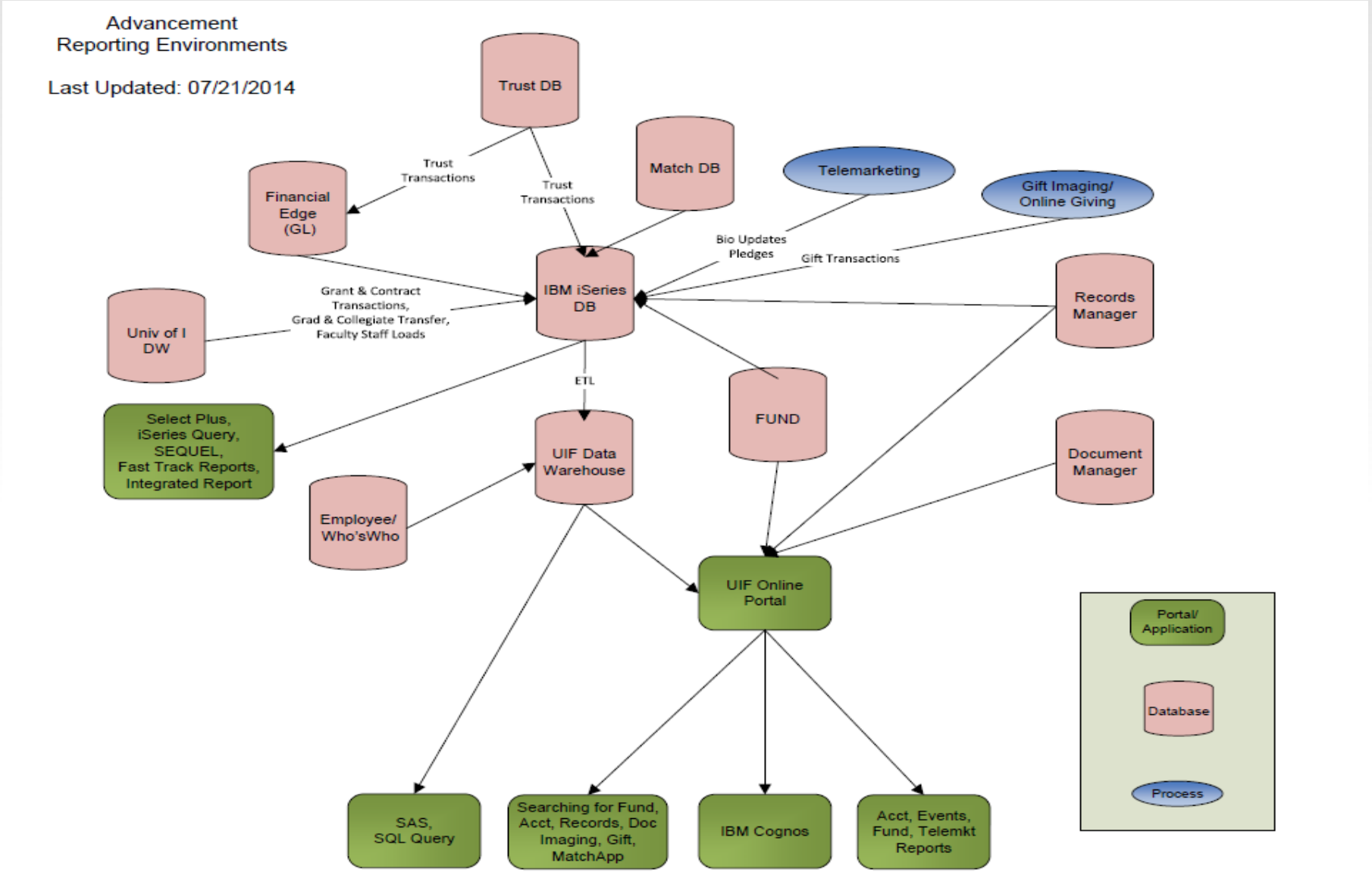
Legacy System

Environment and Architecture

Environment

- Several Data sources for Transactional Database and Data warehouse
- Multiple Data Transformation and Loading layers
  - Data loaded into Transactional Database
  - ETL for Data warehouse
- Reporting environments (*Over 200 Production Reports*)
  - IBM Cognos Reporting
  - IBM iSeries Reporting
  - Reporting from Legacy Databases
- Multiple Query Tools
  - Transactional Database Query Application
  - IBM Cognos Query Application
  - Custom Query Applications

Architecture



Blackbaud CRM and Data Warehouse

Implementation and Customization

blackbaud®

Blackbaud CRM™
DEVELOPERS' CONFERENCE

Implementation

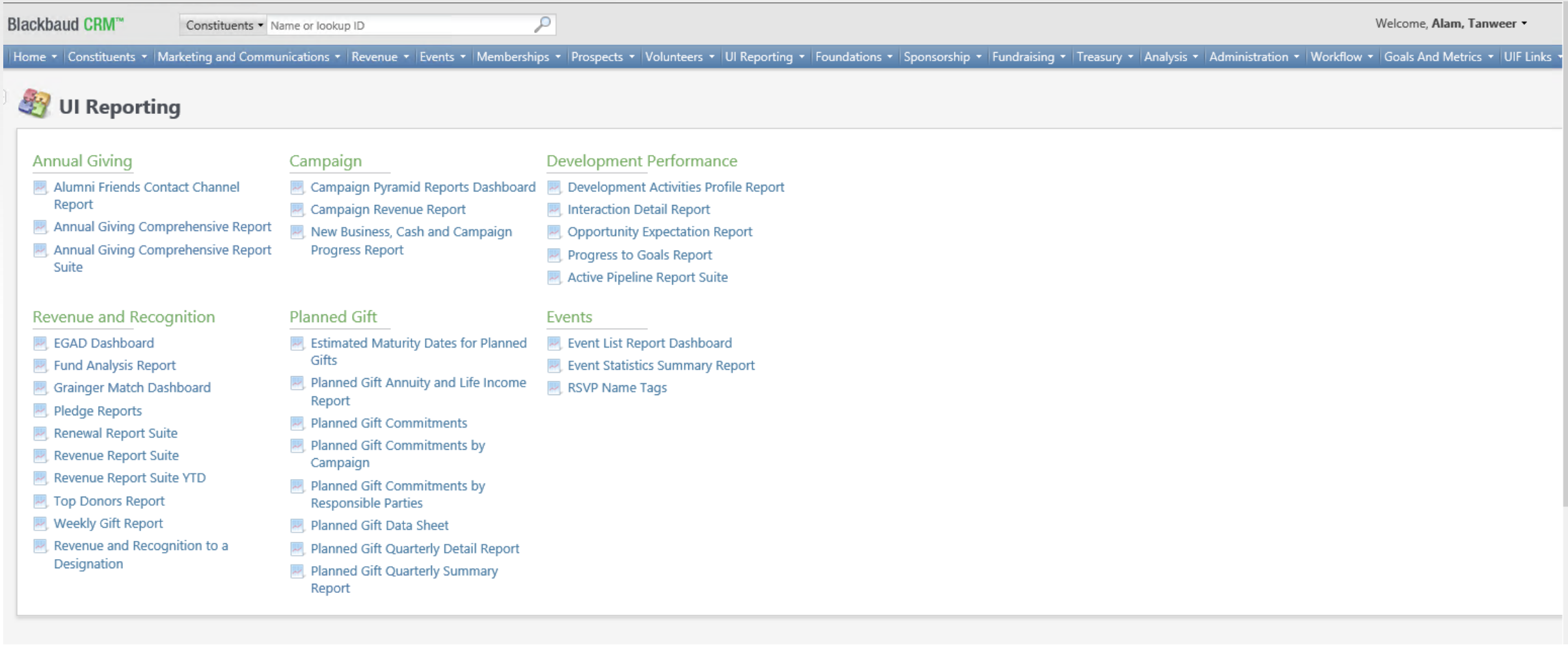
- Phase 1 Plan
  - CRM and BBDW Implementation completed Nov 2015 (*CRM 4.0*).
  - BBDW initial Customization and Extensions deployed by the Blackbaud BI Professional Services consultant.
  - Implementation of Custom CRM Functional Area for Reporting
  - SSRS reports using BBDW OOB and Extension data structures

- Phase 2 BBDW Extension and Customizations:
  - Customization of ETL and Base Table extensions
  - OOB BBDW Query View Ext

- Phase 3 BBDW Customizations
  - Custom Data Structures combining different Functional Areas
  - Custom SSRS reports deployed in CRM sourcing BBDW
  - Custom Query Views deployed in CRM Ad Hoc Query
  - Tableau Implementation

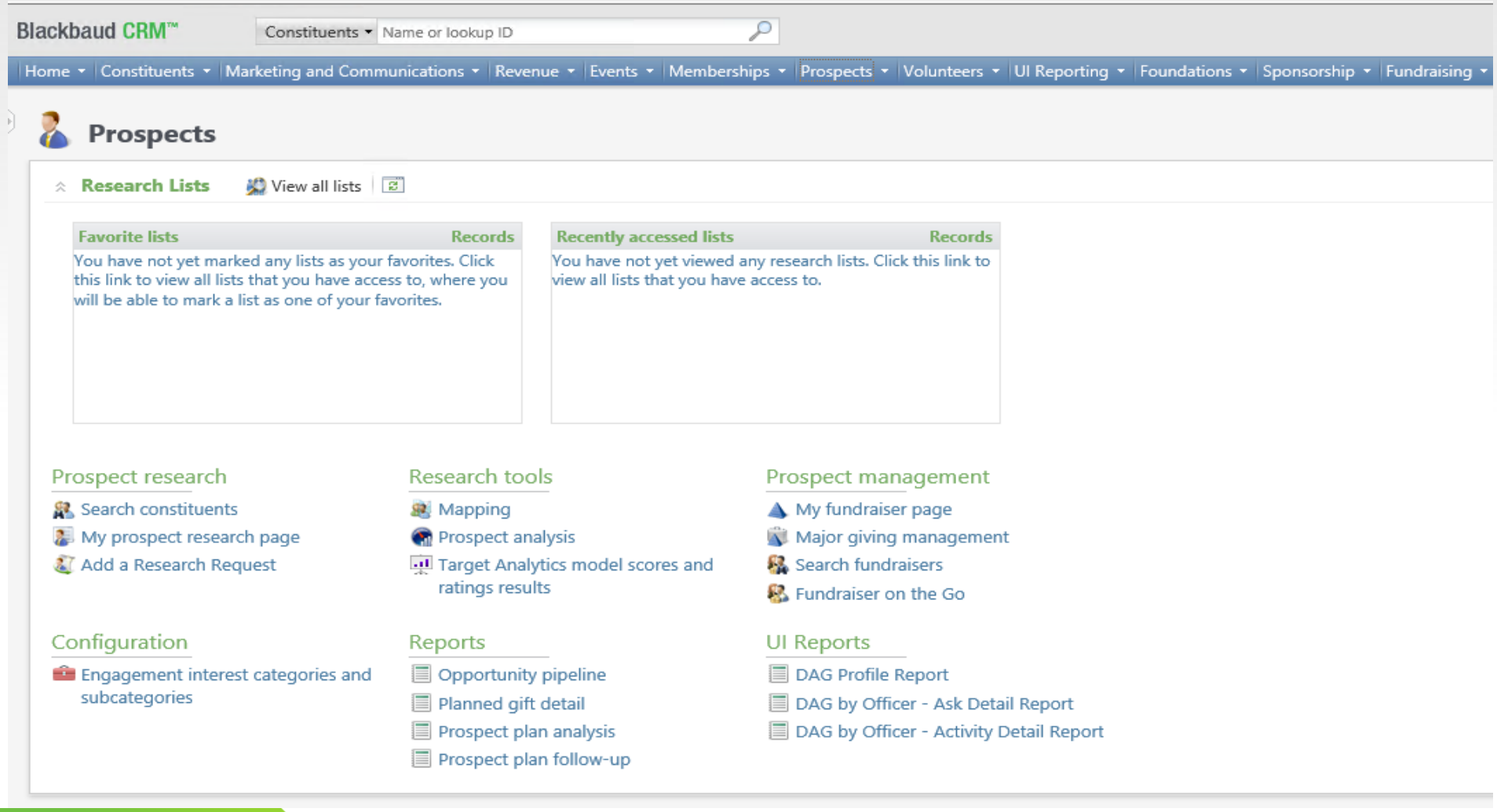
Customizations

New Functional Area Reporting Tab



Customizations

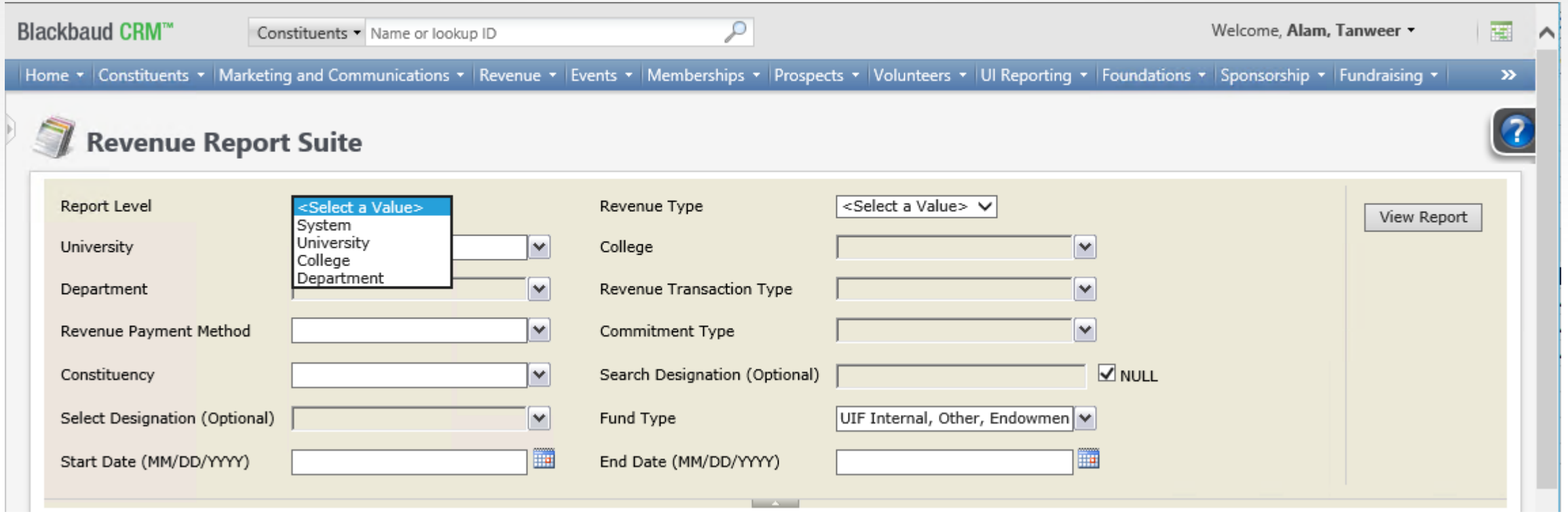
UI Reports group added to the OOB Functional Area tabs



Customizations

OOB SSRS Parameter Selections

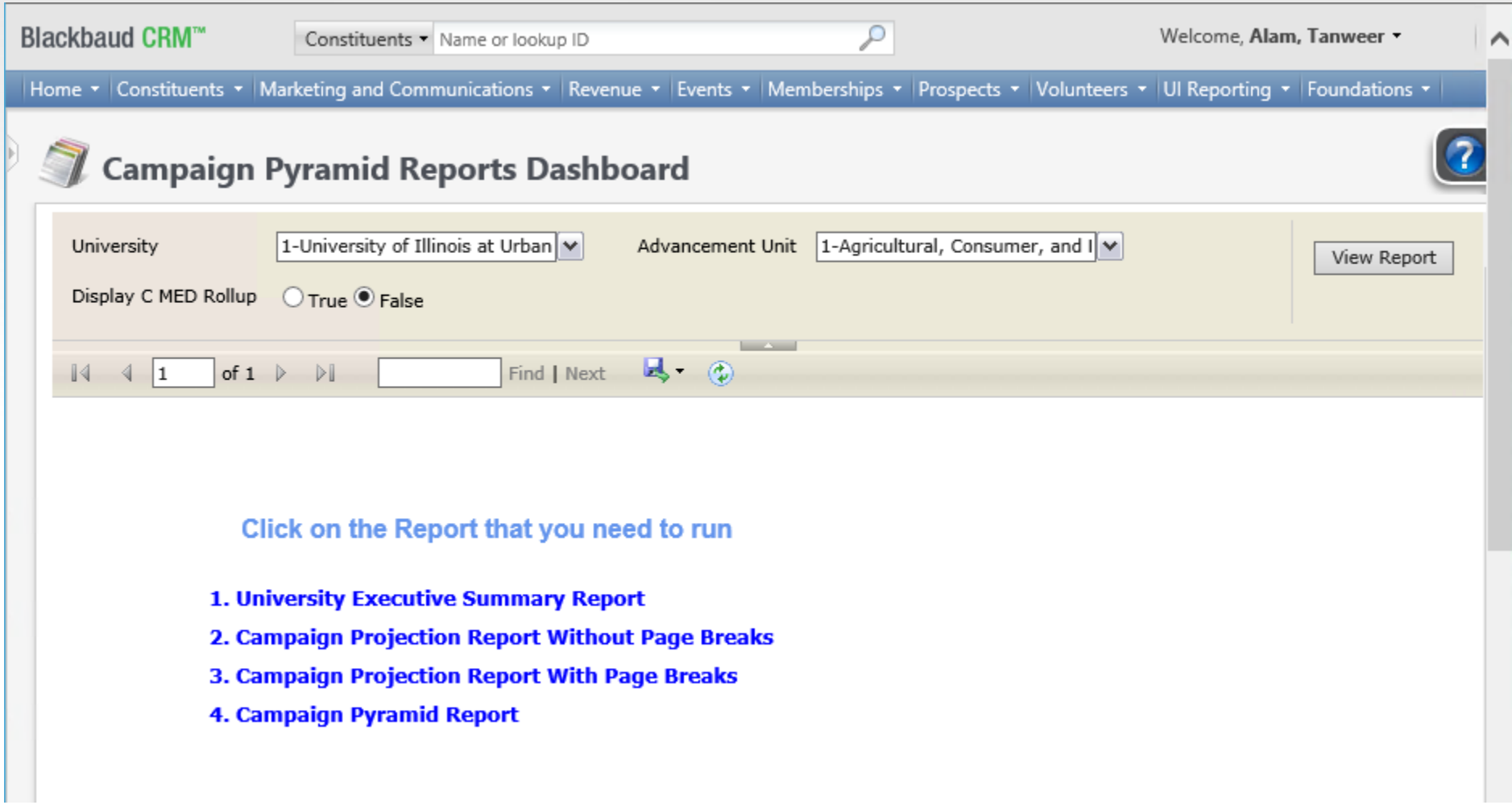
- Multiple Levels of reports imbedded in one Report Suite



Customizations

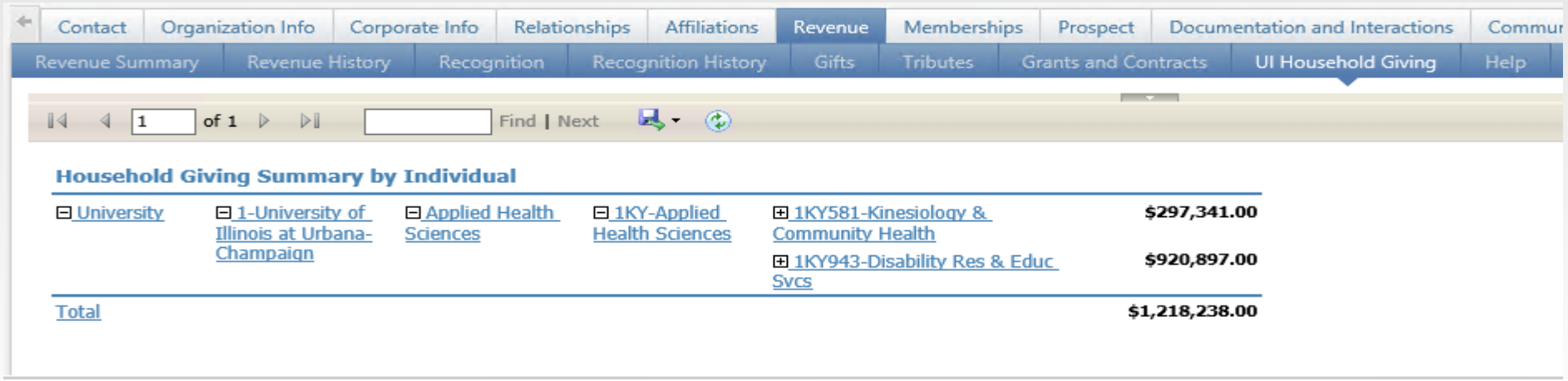
Customizing SSRS Report Functionality

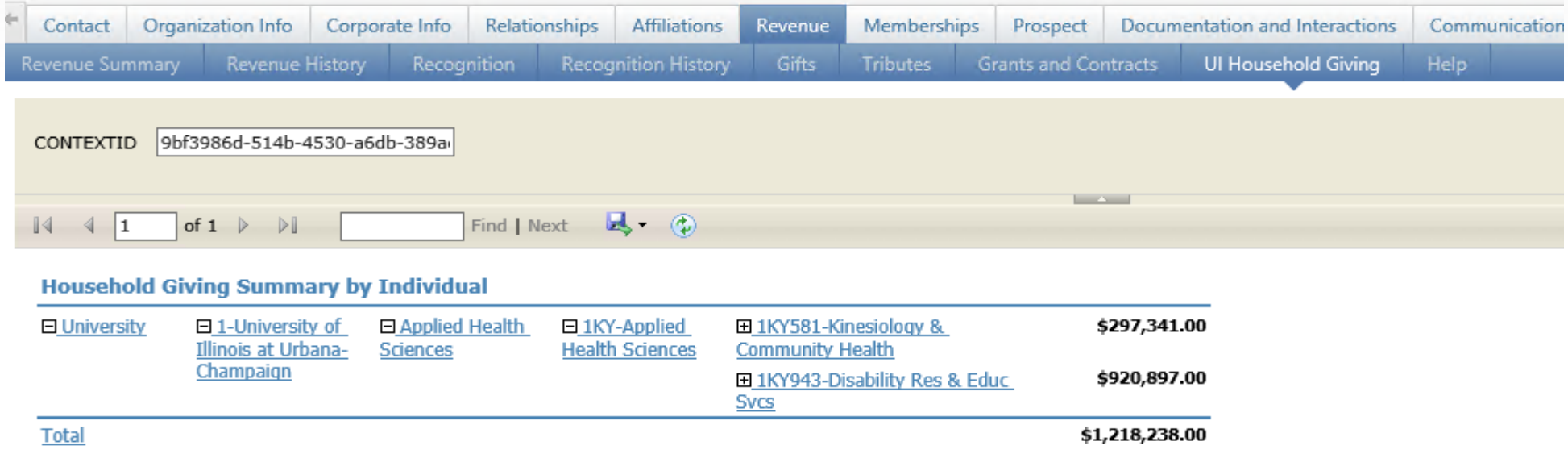
- Reports Dashboard



Customizations

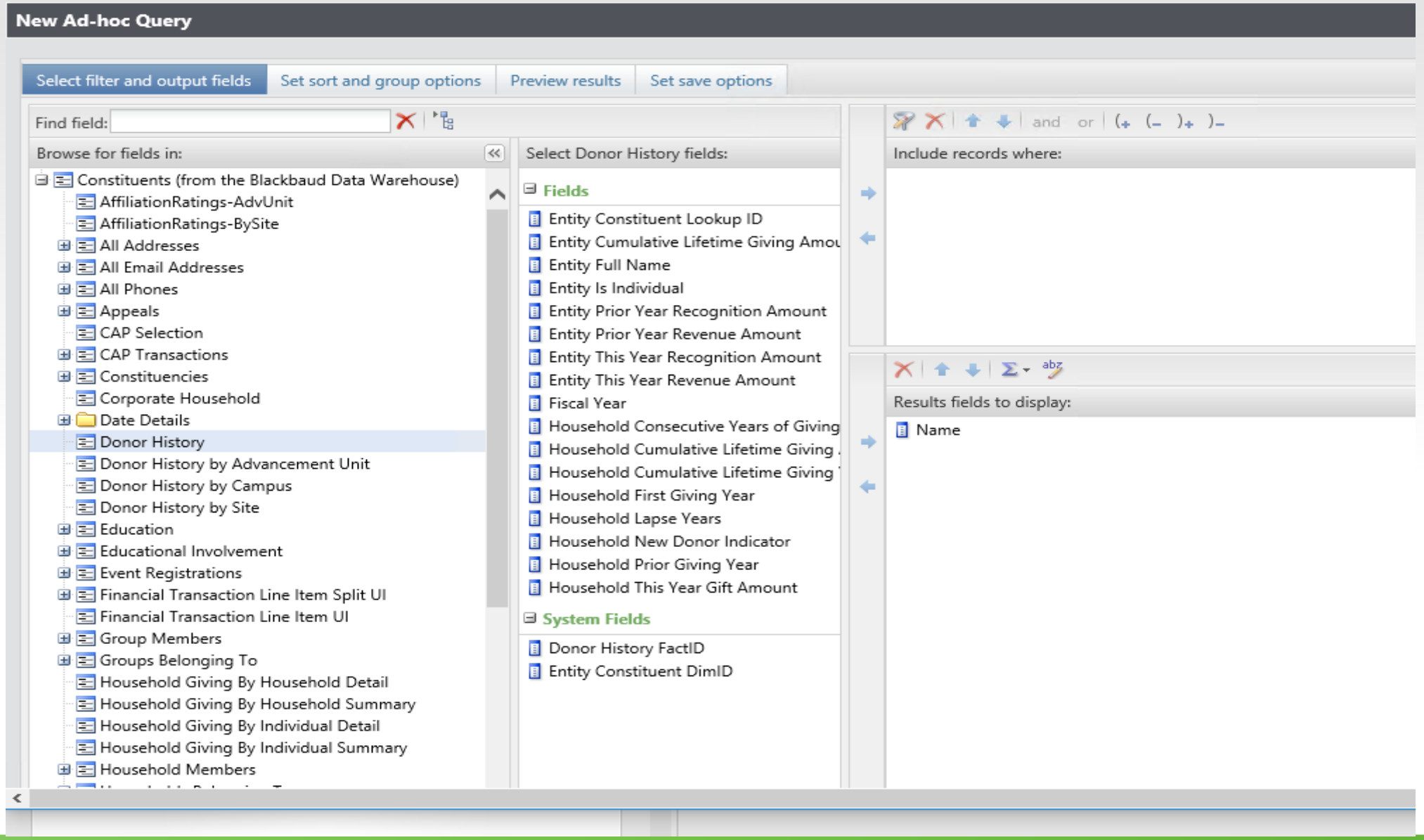
Custom SSRS Household Giving Report Tab on Revenue





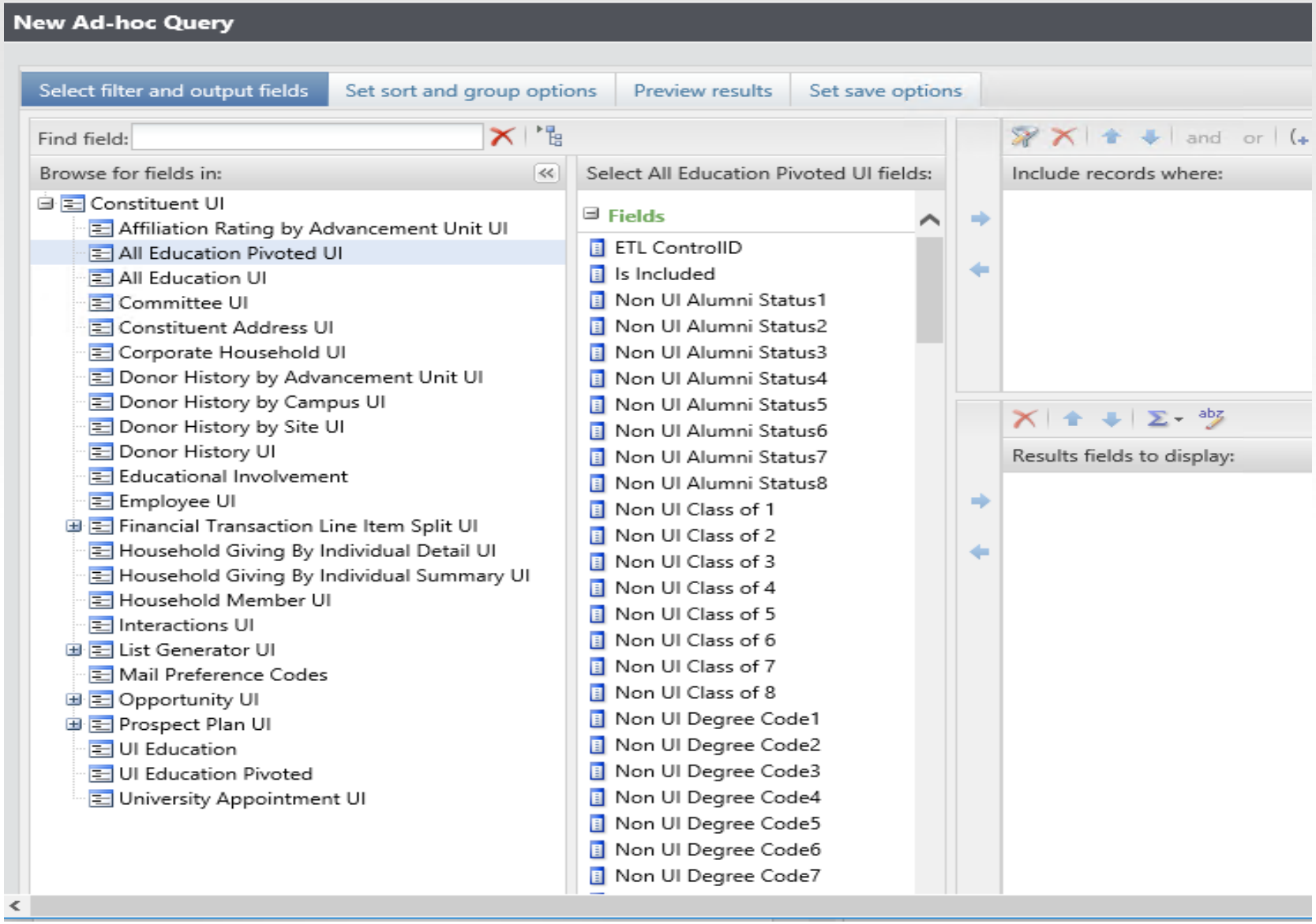
Customizations

Ad Hoc Query
View extensions



Customizations

Custom Ad Hoc Query Views



Customizations

Sample XML for Constituent UI Query View

```
<?xml version="1.0"?>
<QueryViewSpec xmlns="bb_appfx_q_view" MartKey="BBDW" IsRoot="true"
RecordType="Constituent EXT view" Author="BBDW-UserName" Description="A view
defined for querying on Constituent records" Name="Constituent UI" ID="bf24eded-c461-
4e76-9b12-e582d53dbe58" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">

<ViewImplementation ViewName="V_QUERY_DIM_CONSTITUENT">

<ViewSQL> SELECT [CONSTITUENTDIMID] ,[CONSTITUENTSYSTEMID]
,[CONSTITUENTLOOKUPID] ,[FULLNAME] ,[TITLE] ,[FIRSTNAME] ,[MIDDLENAME]
.....
 FROM [BBDW].[DIM_CONSTITUENT] </ViewSQL></ViewImplementation>

<Output><OutputFields>

<OutputField Name="CONSTITUENTDIMID" DataType="Integer" Category="System
Fields" Caption="Constituent Dim ID"/><OutputField Name="CONSTITUENTSYSTEMID"
Category="System Fields" Caption="Constitvent System ID"/><OutputField
Name="CONSTITUENTLOOKUPID" Caption="Constituent Lookup ID"/><OutputField
Name="FULLNAME" Caption="Full Name"/><OutputField Name="TITLE"
Caption="Tittle"/><OutputField Name="FIRSTNAME" Caption="First Name"/><OutputField
Name="MIDDLENAME" Caption="Middle Name"/>  ..............................

..............................

</OutputFields></Output><RelationshipOperations><AddToParentView
Cardinality="OneToOptionalOne" PathAlias="Spouse UI"
Field="SPOUSECONSTITUENTDIMID"
ParentViewRelatedField="CONSTITUENTDIMID"
ParentView="V_QUERY_BBDW_CONSTITUENT"/></RelationshipOperations></QueryVie
wSpec>
```

Customizations

Sample XML for Custom Campaign Query.

```
<?xml version="1.0"?>
<QueryViewSpec xmlns="bb_appfx_queryview" MartKey="BBDW" IsRoot="true"
RecordType="CPN UI" Author="BBUserName" Description="A view defined for querying
on CPN Revenue records" Name="CPN UI" ID="48a7-9850-28ede84aa180-caa0ae85-a379"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"><ViewImplementation
ViewName="USR_V_FACT_CPNREVENUE_EXT"><ViewSQL> SELECT
F_TRANS_LINE_SPLIT_FACTID, FINANCIALTRANSACTIONSPLITAMOUNT,
CPNNEXT_CPNDIMID, CPNNEXT_SITEDIMID, CPNNEXT_SPLITSITEDIMID,
CPNNEXT_SPLITADVANCEMENTUNITNAME,
CPNNEXT_SPLITADVANCEMENTUNITDESCRIPTION FROM
BBDW.FACT_CPNREVENUE_EXT CR WHERE COUNTINCPN=1
</ViewSQL></ViewImplementation><Output><OutputFields><OutputField
Name="FINANCIALTRANSACTIONLINEFACTID" DataType="Integer"
Category="System Fields" Caption="Financial Transaction Line Item Fact
ID"/><OutputField Name="FINANCIALTRANSACTIONSPLITAMOUNT"
DataType="Money" Caption="Financial Transaction Split Amount"/><OutputField
Name="CPNNEXT_CPNDIMID" DataType="Integer" Category="System Fields"
Caption="CPN Next CPN Dim ID"/><OutputField Name="CPNNEXT_SITEDIMID"
DataType="Integer" Category="System Fields" Caption="CPN Next Site Dim
ID"/><OutputField Name="CPNNEXT_SPLITSITEDIMID" DataType="Integer"
Category="System Fields" Caption="CPN Next Split Site Dim ID"/><OutputField
Name="CPNNEXT_SPLITADVANCEMENTUNITNAME" Caption="CPN Next Split
Advancement Unit Name"/><OutputField
Name="CPNNEXT_SPLITADVANCEMENTUNITDESCRIPTION" Caption="CPN Next
Split Advancement Unit
Description"/></OutputFields></Output><RelationshipOperations><AddToParentView
Cardinality="OneToOptionalOne" PathAlias="CPN Revenue UI"
Field="F_TRANS_LINE_SPLIT_FACTID"
ParentViewRelatedField="F_TRANS_LINE_SPLIT_FACTID"
ParentView="V_FACT_FINANCIALTRANSACTIONSPLIT_EXT"/></RelationshipOperati
ons></QueryViewSpec>
```

Tableau Implementation

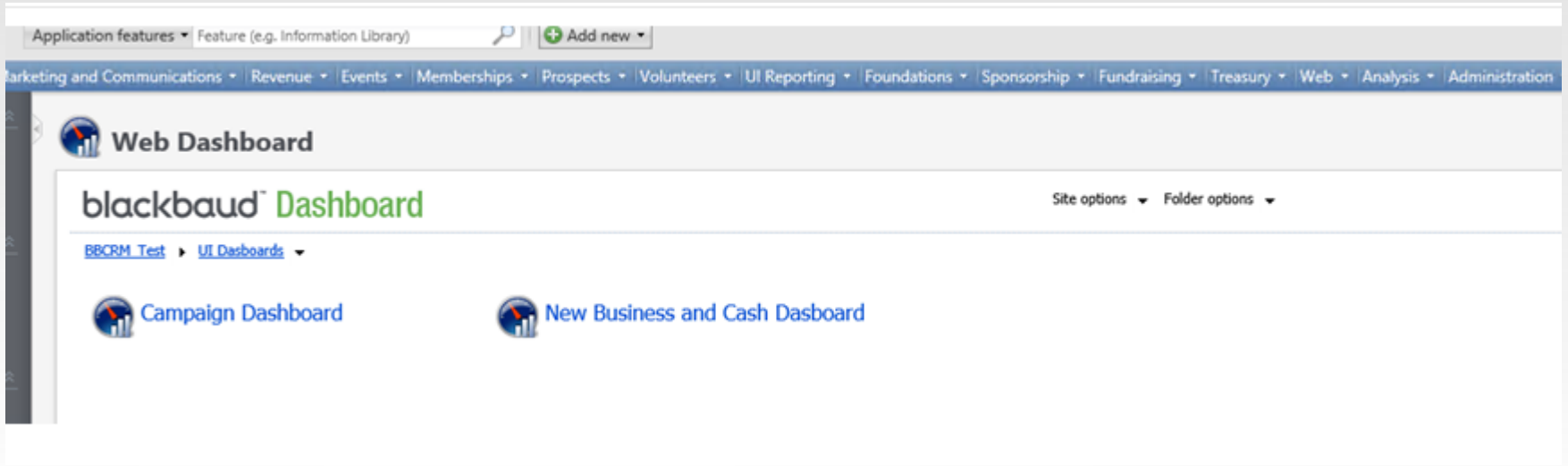
CRM Customization - Tableau Dashboard

- Phase 1 – Architecture Setup
  - Tableau Server Configuration – Workspace exclusive for CRM
  - Security Configuration

- Phase 2 Configuring CRM to surface Tableau Dashboards
  - Configuring Web Dashboard functionality
  - Creating Tableau Dashboard Functional Area
  - Configuring Dashboards with multiple pages and tabs.

CRM Customization - Tableau Dashboard

Configuring Web dashboard Interface to embed Tableau Dashboards



Creating Dashboard Functional Area Tab to surface Tableau Dashboards

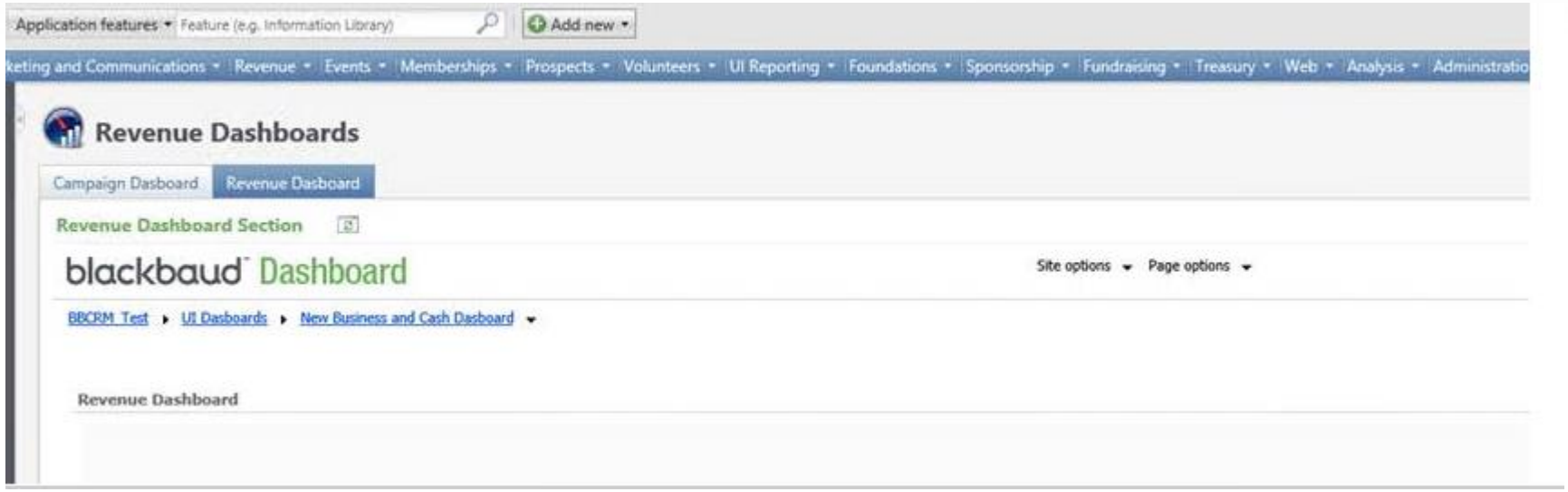


Tableau Dashboard – Editing Page Display Properties

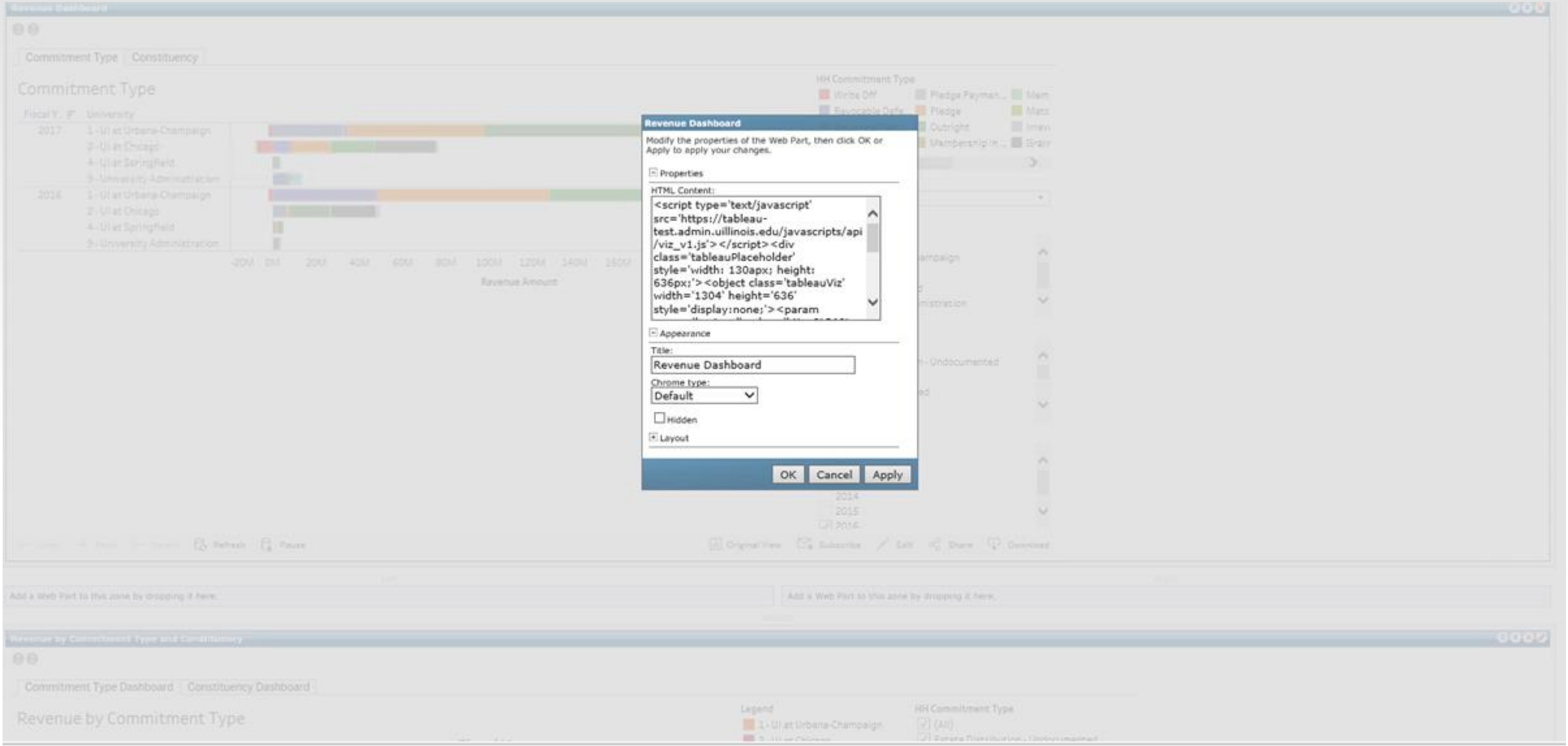
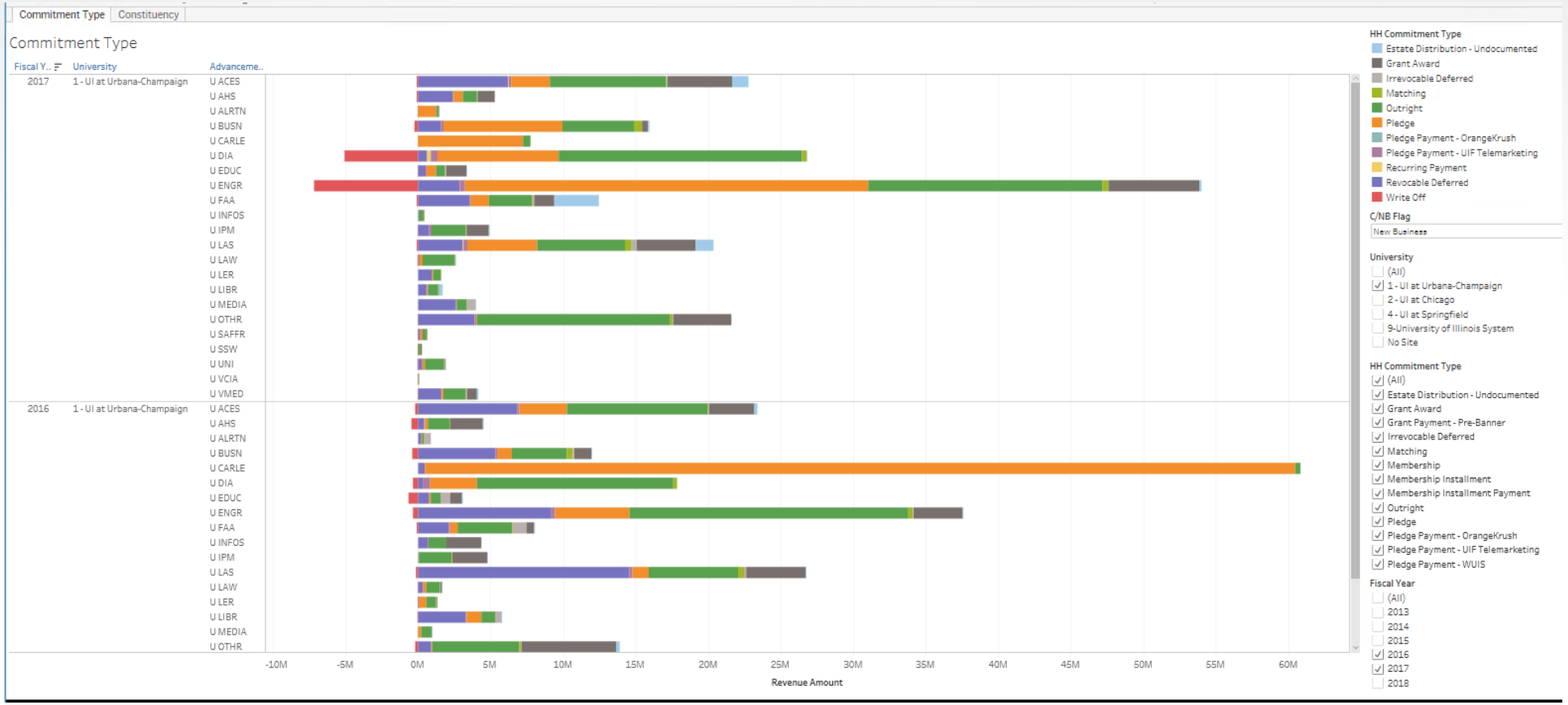


Tableau Dashboard - CRM Interface Customization

- Phase 3 CRM Dashboard Functional Area Interface enhancements
  - Deploying Custom HTML pages to build dynamic and robust dashboard features.
  - Web Dashboard/Tableau configurations for tablets and smart phones.



Thank you!

Contact: TanweerA@uif.uillinois.edu