

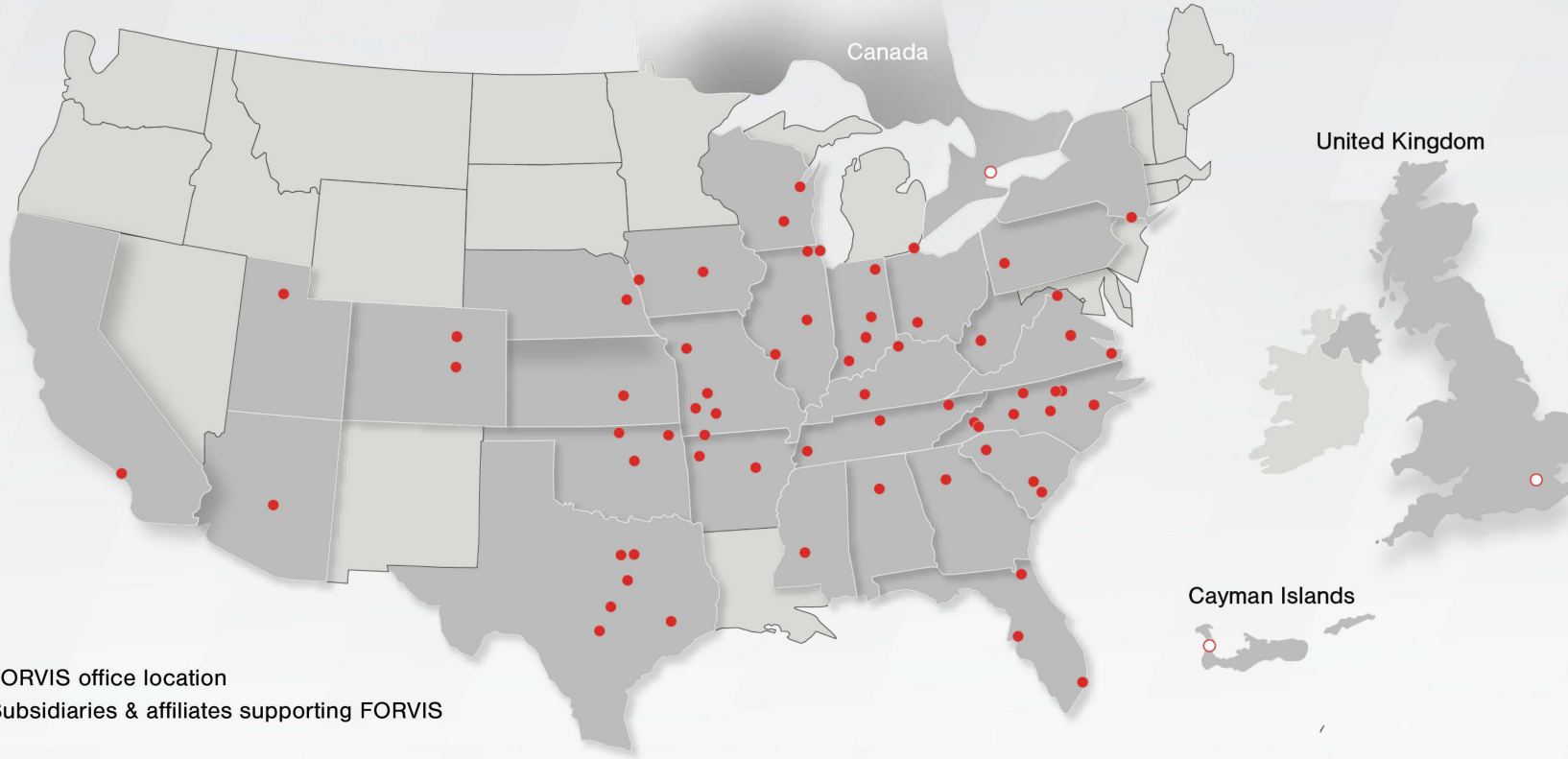
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Business Technology Solutions

The Great Data Aggregator in the Sky: Solver Data Warehouse

April 25, 2024

Global Presence & Reach



- FORVIS office location
- Subsidiaries & affiliates supporting FORVIS

Subsidiaries & Affiliates Supporting FORVIS

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- FORVIS Global Advisory Canada ULC**
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**FORVIS was ranked number eight on Inside Public Accounting's 2022 annual ranking of accounting firms by revenue.

By the Numbers

Top 10
U.S. Public Accounting Firm *

27
States + Canada, U.K., & **
Cayman Islands

10+
Industries

68
Markets

500+
Partners & Principals

6,000+
Team Members



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**Services outside the United States are provided through our subsidiaries and/or affiliates supporting FORVIS.

Business Technology Solutions

FORVIS provides enterprise resource planning (ERP) and customer relationship management (CRM) platform analysis, design, implementation, upgrade, training, and support services.

In addition, our Insights & Automation services include business intelligence (BI), robotic process automation (RPA), assessments, implementations, and training.



We are an award-winning partner of Solver Global, which itself is highly rated by G2, a leading software marketplace.

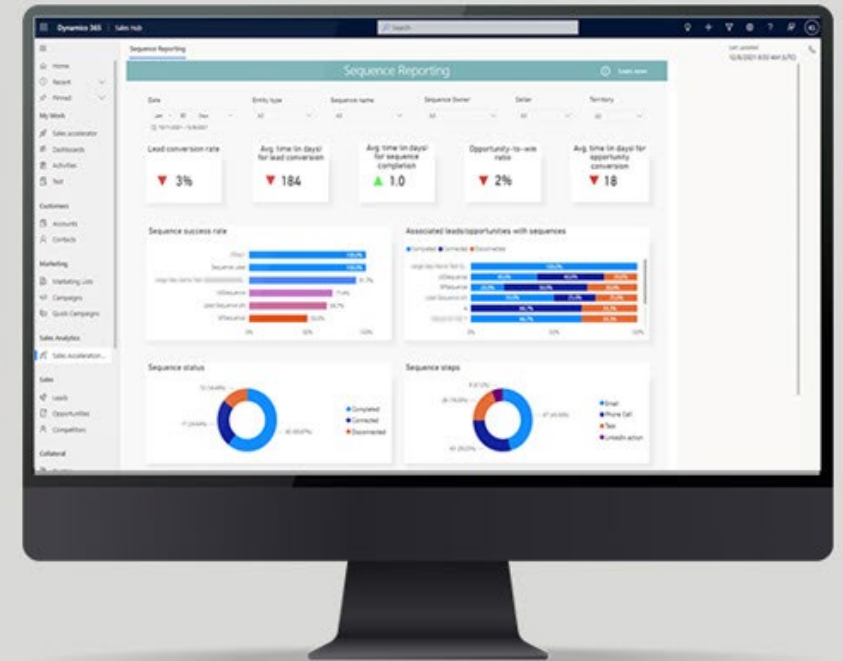
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Microsoft
Partner

Sage Partner

ORACLE
NETSUITE
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PARTNER



From sales forecasting to financial reporting,
learn what CRM and ERP technologies can do.

Presenter



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Business Technology Solutions

The Great Data Aggregator in the Sky: Solver Data Warehouse

April 25, 2024

Objectives

- Describe how the Solver Data Warehouse can consolidate data from various systems, including ERPs, CRMs, & custom applications into a central data repository
- Discuss how built-in data quality features can help improve data hygiene by detecting anomalies, inconsistencies, & duplicates
- Explain how role-based dashboards, reports, & analytics can provide business insights using your aggregated data

Agenda

9 a.m. CT ● What Is a Data Warehouse?

9:10 ● Solver Data Warehouse

9:30 ● Reporting & Planning

What Is a Data Warehouse?

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A Data Warehouse



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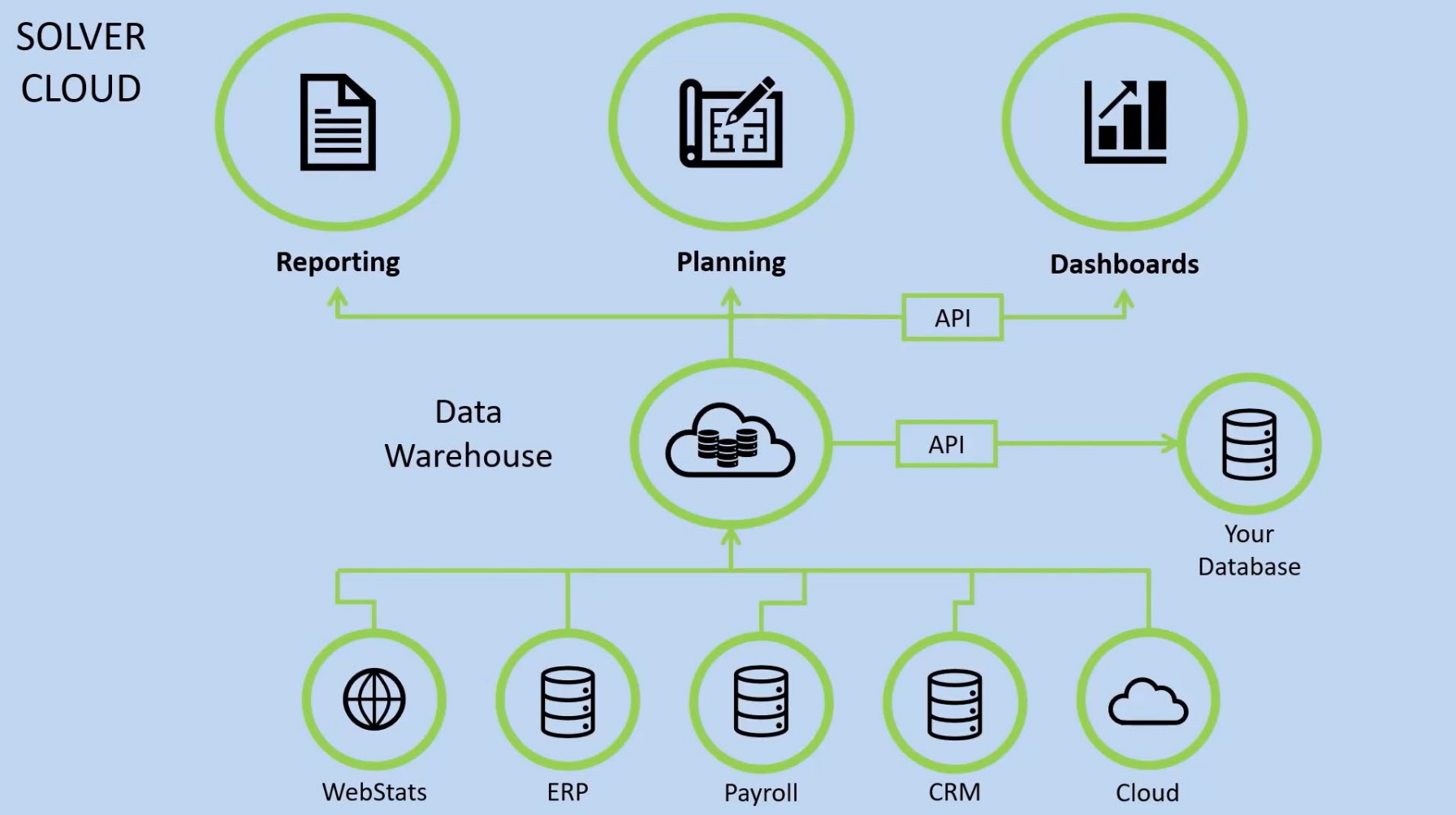
What Is a Data Warehouse?

- Centralized repository
- Structured & semi-structured data
- Multiple sources
- Cleaned & standardized

What a Data Warehouse Isn't

- Accounting system
- Spreadsheet
- OLAP cube

The Solver Data Warehouse



What Are Elements of a Data Warehouse?

- Fact tables – store the activity you want to measure
- Dimensions – store master or setup tables
- Integrations – imports the data
- Rules – clean & update data
- Jobs – automate integrations & integrations

Why Have a Data Warehouse?

To make decisions!



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Solver Data Warehouse

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Solver Data Warehouse

- Microsoft Azure SQL-based
- Relational database
- Built for data analytics
- Uses Star Schema

Setting Up the Solver Data Warehouse

- Periods
- Dimensions
- Modules
- Module Schema
- Rules

Periods

- Used for all modules in the tenant
- Help with time intelligence
- Contain multiple columns
 - Year
 - Month
 - Quarter
 - Week
 - Day

Dimensions

- Define master records
- Can be used with multiple modules
- Contain a code, description, & attributes


Dimensions

CUSTOMER	DEPARTMENT	EMPLOYEE	GP ACCOUNT
Accounts Recei... Revenues TestDate	Accounts Paya... Accounts Recei... Capital General Ledger General Ledger... Inventory Payroll Purchasing Revenues Travel	Payroll Revenues Strategy Travel	GP General Led... GP General Led... GP Payroll Deta...
Last updated 3 months ago	Last updated 3 years ago	Last updated 3 months ago	Last updated 8 months ago
Size <1 MB	Size <1 MB	Size <1 MB	Size <1 MB
GP ACCOUNT STRING	GP DEPARTMENT	GP DIVISION	GP EMPLOYEES
GP General Led... GP General Led... GP Payroll Deta...	GP General Led... GP General Led... GP Payroll Deta...	GP General Led... GP General Led... GP Payroll Deta...	GP Payroll Deta...
Last updated 8 months ago	Last updated 8 months ago	Last updated 8 months ago	Last updated 2 years ago
Size <1 MB	Size <1 MB	Size <1 MB	Size <1 MB

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Dimensions

Dimension Label

BC Accounts 

SYSTEM FIELDS

System Name	Field Label ▲	Data Type	Visible	Updated
Active	Active	bit	<input checked="" type="checkbox"/>	05/21/2023 09:30 PM
Alias	Alias	Short Text	<input checked="" type="checkbox"/>	05/21/2023 09:30 PM
Code	Code	Short Text	<input checked="" type="checkbox"/>	05/21/2023 09:30 PM
Description	Description	nvarchar(200)	<input checked="" type="checkbox"/>	05/21/2023 09:30 PM
Source	Source	nvarchar(100)	<input checked="" type="checkbox"/>	05/21/2023 09:30 PM

CUSTOM FIELDS

System Name	Field Label ▲	Data Type	Visible	Updated
UDF002	Account Category	Long Text	<input checked="" type="checkbox"/>	05/21/2023 09:36 PM
UDF004	Account Type	Short Text	<input checked="" type="checkbox"/>	05/21/2023 09:36 PM
UDF006	Direct_Posting	Comment	<input checked="" type="checkbox"/>	05/21/2023 09:57 PM
UDF003	Income/Balance	Short Text	<input checked="" type="checkbox"/>	05/21/2023 09:36 PM
UDF007	Sorting Category	Long Text	<input checked="" type="checkbox"/>	05/22/2023 04:41 PM
UDF001	Subcategory	Long Text	<input checked="" type="checkbox"/>	05/21/2023 09:30 PM
UDF005	Totaling	Short Text	<input checked="" type="checkbox"/>	05/21/2023 09:37 PM

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Modules


- Contain the records to be measured
- Also known as fact tables
- Examples
 - General ledger activity
 - Sales transactions
 - Purchase orders

Modules




DECISION ADVISOR	GENERAL LEDGER	GENERAL LEDGER DETAIL	GOOGLE ANALYTICS
Category Currency Entity Line Details Period Scenario	Account Scenario Category Source System Corresponding ... Currency Department Entity Interco Parent Line Details Minority Parent Period	Account Category Corresponding ... Currency Department Entity Line Details Period Scenario Source System	Category Entity Period Scenario
Last updated –	Last updated 2 years ago	Last updated 3 years ago	Last updated –
Size <1 MB	Size 153.0 MB	Size 1.3 MB	Size 1.9 MB
GP GENERAL LEDGER DETAIL	GP GENERAL LEDGER SUMMARY	GP PAYABLES	GP PAYROLL DETAILS
Category Currency Entity GP Account GP Account Stri... GP Department GP Division Line Details Period Scenario	Category Currency Entity GP Account GP Account Stri... GP Department GP Division Line Details Period Scenario	Category Currency Entity GP Vendor Period Scenario	GP Account GP Account Stri... GP Department GP Division GP Employees GP Payroll Codes GP Payroll Dept GP Payroll Jobti... Period Scenario
Last updated 2 years ago	Last updated 8 months ago	Last updated a year ago	Last updated 2 years ago
Size 20.4 MB	Size <1 MB	Size <1 MB	Size 2.0 MB

Modules

Module Label 

SYSTEM FIELDS 

System Name	Field Label ▲	Data Type	Visible	Updated
Value2	Annual Amount	Amount	<input checked="" type="checkbox"/>	03/30/2018 03:11 AM
Value1	Monthly Amount	Amount	<input checked="" type="checkbox"/>	03/30/2018 03:11 AM
Value3	Other Amount	Amount	<input checked="" type="checkbox"/>	03/30/2018 03:11 AM
RowComment	RowComment	Long Text	<input checked="" type="checkbox"/>	03/30/2018 03:11 AM
RowId	RowId	Integer	<input type="checkbox"/>	12/31/0000 06:09 PM
TransactionID	TransactionID	Integer	<input checked="" type="checkbox"/>	12/31/0000 06:09 PM

CUSTOM FIELDS   

System Name	Field Label ▲	Data Type	Visible	Updated
UDF005	Additional DAta	Long Text	<input checked="" type="checkbox"/>	05/31/2019 03:50 PM
UDF006	Journal Entry Number	Short Text	<input checked="" type="checkbox"/>	11/25/2020 10:27 AM
UDF007	Original Posting Date	Date	<input checked="" type="checkbox"/>	03/07/2022 02:09 PM
UDF002	Originating Document Number	Short Text	<input checked="" type="checkbox"/>	06/28/2018 09:30 AM
UDF003	Originating Master Number	Short Text	<input checked="" type="checkbox"/>	06/28/2018 09:30 AM
UDF004	Series	Short Text	<input checked="" type="checkbox"/>	06/28/2018 09:30 AM
UDF008	Transaction Description	Long Text	<input checked="" type="checkbox"/>	06/12/2023 10:15 AM
c_VarianceComments	Variance Comments	Long Text	<input checked="" type="checkbox"/>	03/30/2018 03:11 AM
UDF009	Vendor ID	Short Text	<input checked="" type="checkbox"/>	07/20/2023 03:47 PM

Module Schema

- Defines which dimensions are used by a module
- Creates columns in the module for the dimensions

Module Schema

MODULE SCHEMA Select Modules to View ▾

[EDIT CONFIGURATION](#)

Dimension Label ▲	Accounts Payable	Accounts Receivable	Capital	General Ledger	General Ledger Detail	Payroll	Inventory	Projects	Revenues
Account	●	●	●	●	●	●	●	●	●
Asset	●	●	●	●	●	●	●	●	●
BC Accounts	●	●	●	●	●	●	●	●	●
BC Accounts 2	●	●	●	●	●	●	●	●	●
BC Area 2	●	●	●	●	●	●	●	●	●
BC Branch	●	●	●	●	●	●	●	●	●
BC Bus Group 2	●	●	●	●	●	●	●	●	●
BC Cust Group 2	●	●	●	●	●	●	●	●	●
BC Customer Gro...	●	●	●	●	●	●	●	●	●
BC Department	●	●	●	●	●	●	●	●	●
BC Dept 2	●	●	●	●	●	●	●	●	●
BC Grants	●	●	●	●	●	●	●	●	●
BC Product	●	●	●	●	●	●	●	●	●
BC Purchaser 2	●	●	●	●	●	●	●	●	●
BC Sales Campaig...	●	●	●	●	●	●	●	●	●
BC Salesperson 2	●	●	●	●	●	●	●	●	●
Benchmark Orgs	●	●	●	●	●	●	●	●	●
Category	●	●	●	●	●	●	●	●	●
CFA Accounts	●	●	●	●	●	●	●	●	●
Corresponding En...	●	●	●	●	●	●	●	●	●
























Integrations

- Import data
- One or more sources
- Expressions for formatting data

Integrations

- Utilize connectors
- 22 connectors
- Examples
 - Microsoft Dynamics 365
 - Salesforce
 - SQL Server
 - Sage Intacct
 - Google Analytics

Integrations















 ACUMATICA	 CSV FILES (DEPRECATED IN CLOU...)	 DYNAMICS 365 BUSINESS CENTR...	 DYNAMICS 365 BUSINESS CENTR...	 DYNAMICS 365 FINANCE & OPER...
 DYNAMICS 365 SALES & SERVICE	 DYNAMICS GP 2016+ ODATA	 DYNAMICS NAV	 EZYVET	 FILE IMPORT (EXCEL AND CSV)
 GATEWAY CONNECTOR	 GENERIC ODATA	 GOOGLE ANALYTICS	 HUBSPOT	 MYOB
 NETSUITE	 QUICKBOOKS ONLINE	 SAGE INTACCT	 SALESFORCE	 SAP BUSINESS BYDESIGN
 SAP BUSINESS ONE - HANA	 SQL CONNECTOR	 TEST CONNECTOR		

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Integrations

← ① CONNECTOR — ② TASK MANAGER — ③ PARAMETERS — ④ SUMMARY

NEW TASK

Step	Task	Source	Target	Target Type	Actions
⌵ 1	Accounts	Chart_of_Accounts	BC Accounts	Dimension	 
⌵ 2	Department	Dimension_Values_Excel	BC Department	Dimension	 
⌵ 3	Customer Group	Dimension_Values_Excel	BC Customer Group	Dimension	 
⌵ 4	Branch	Dimension_Values_Excel	BC Branch	Dimension	 
⌵ 5	Product	Dimension_Values_Excel	BC Product	Dimension	 
⌵ 6	Grants	Dimension_Values_Excel	BC Grants	Dimension	 
⌵ 7	BC General Ledger	General_Ledger_Entries_Excel	BC General Ledger	Module	 

Integrations

TASK: BC General Ledger

1. Task Details

2. Task Mapping

3. Task Filtering

Drag source fields to target expressions to map or create a new target field.

SOURCE : General_Ledger_Entries_Excel PREVIEW

Source Field Search
Entry_No
Posting_Date
Document_Type
Document_No
G_L_Account_No
G_L_Account_Name
Description
Job_No
Global_Dimension_1_Code
Global_Dimension_2_Code
IC_Partner_Code
Gen_Posting_Type
Gen_Bus_Posting_Group
Gen_Prod_Posting_Group

TARGET : BC General Ledger

PREVIEW

Target Field	Mapping Expression
BC Department	[Global_Dimension_1_Code]
BC Customer Group	[Global_Dimension_2_Code]
BC Branch	[Shortcut_Dimension_3_Code]
BC Grants	[Shortcut_Dimension_6_Code]
BC Product	[Shortcut_Dimension_4_Code]
BC Accounts	[G_L_Account_No]
Currency	"USD"
Entity	"CRONUS"
Period	TEXT([Posting_Date],"YYYYMMDD")
Scenario	"ACT"
Source System	
Posted Date	[Posting_Date]
Amount	[Amount]

DRAG SOURCE FIELD HERE TO CREATE A NEW TARGET OR CLICK HERE

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Rules

- Used to create, manipulate, & delete data
- SQL Stored Procedures
- Examples
 - Take data from staging to production
 - Delete records
 - Create summary data
 - Create allocations
 - Translate currency

Jobs

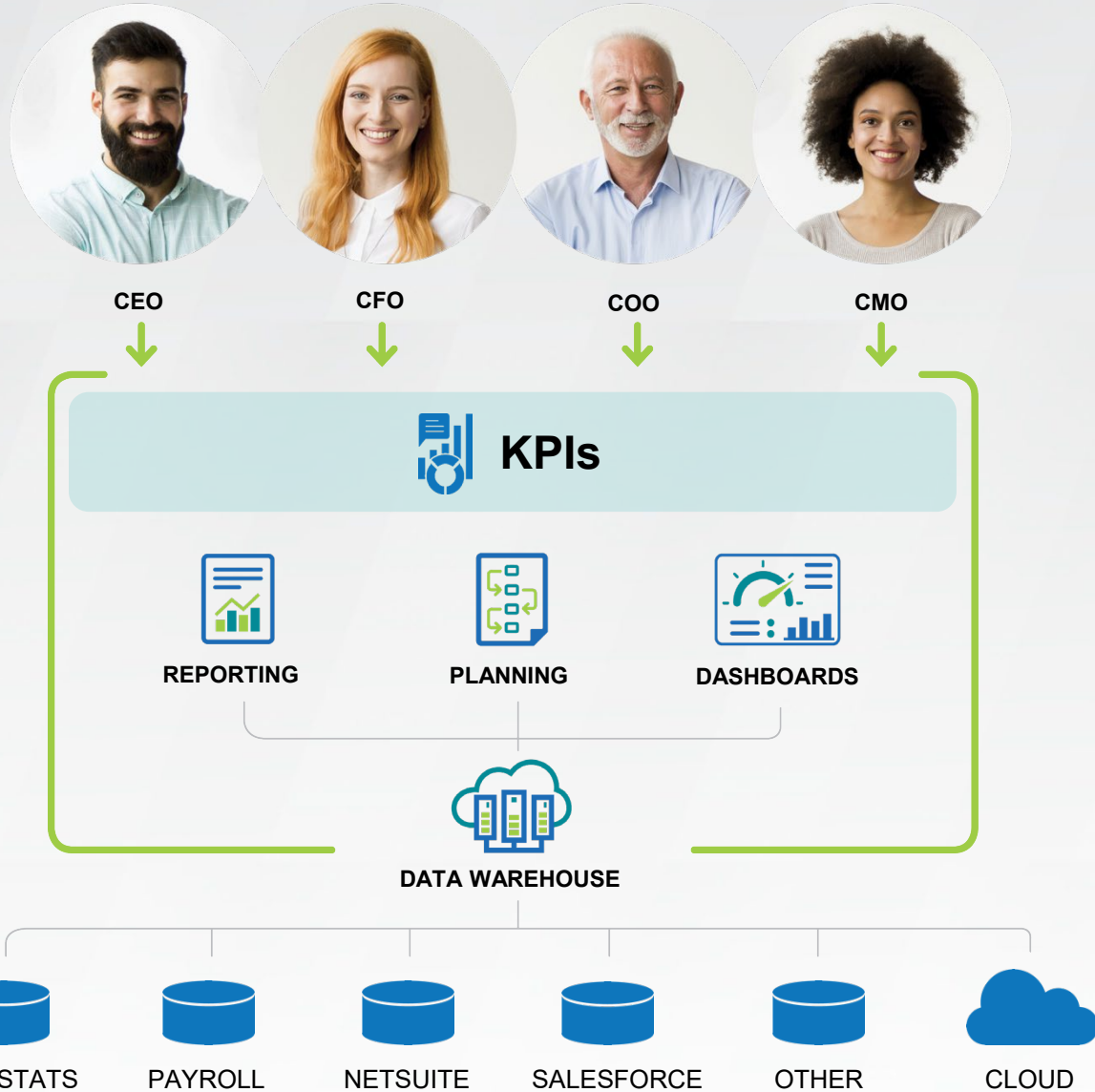
- Used to schedule integrations & rules
- Run on schedule or manually
- Notifications for success or failure

Reporting & Planning

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Solver can provide key insights across the organization.



Complete Insight ...

Faster, Better Decisions

Key Benefits

- Single cloud portal & database
- Rapid configuration with templates
- Quick time to value
- Combines the best of CPM & BI

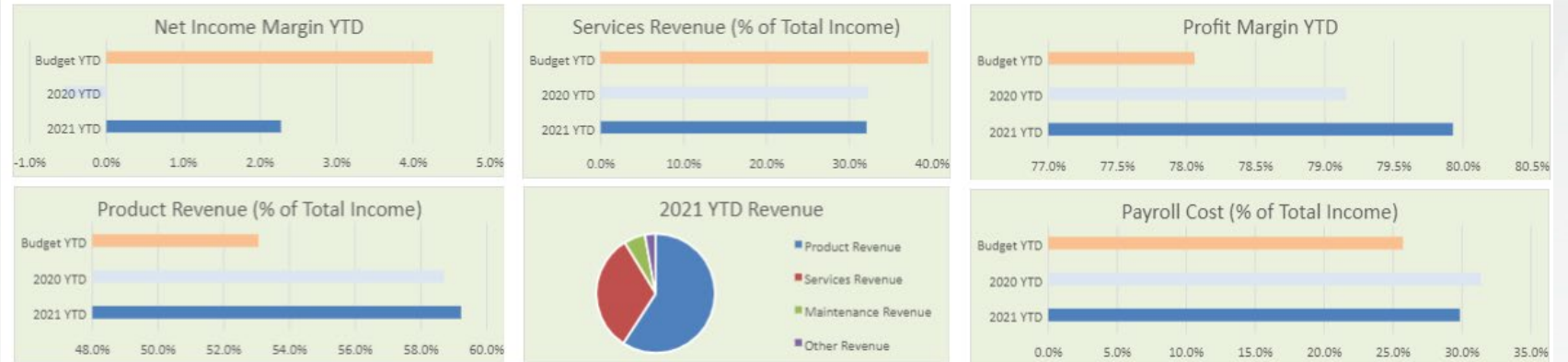
Solver Apps

- Process automation
- KPIs & alerts
- Dashboards
- Reporting & consolidation
- Budgeting & forecasting
- Intelligent Data Warehouse
- Marketplace with templates
- Data source connectors

Reporting

- Excel-based report designer
- Security-driven
- Parameter-based

P&L Combo Report with KPI Analysis
Corporate US



Account Descriptions	October, 2021						
	Actual	Prior Year	Variance	Var %	Budget	Variance	Variance
Revenue							
40010 Product Revenue	846,514	872,169	(25,655)	-2.9%	(500)	847,014	-169402.9%
40020 Services Revenue	456,505	489,538	(33,033)	-6.7%	445,307	11,198	2.5%
40030 Maintenance Revenue	81,419	85,510	(4,091)	-4.8%	78,397	3,022	3.9%
40040 Other Revenue	46,165	45,906	260	0.6%	43,920	2,245	5.1%
40050 Comprehensive Income	0	0	0	0.0%	0	0	0.0%
Total Revenue	1,430,604	1,493,123	(62,519)	-4.2%	567,124	863,480	152.3%
Cost of Goods Sold							
50010 COGS - Product Sales	287,393	336,206	48,813	14.5%	283,090	(4,303)	-1.5%
Cost of Goods Sold	287,393	336,206	48,813	14.5%	283,090	(4,303)	-1.5%
Profit Margin	1,143,211	1,156,916	(13,706)	-1.2%	284,034	859,177	302.5%
Profit Margin %	79.9%	77.5%	2.4%	3.1%	50.1%	29.8%	59.6%

Account Descriptions	Year-To-Date						
	Actual	Prior Year	Variance	Var %	Budget	Variance	Variance
Revenue							
8,409,079	7,659,762	749,317	9.8%	7,188,374	1,220,705	17.0%	
4,553,236	4,211,199	342,037	8.1%	5,352,254	(799,018)	-14.9%	
827,237	780,984	46,253	5.9%	669,878	157,359	23.5%	
409,957	397,865	12,092	3.0%	338,555	71,402	21.1%	
0	0	0	0.0%	0	0	0.0%	
Total Revenue	14,199,509	13,049,810	1,149,699	8.8%	13,549,061	650,448	4.8%
Cost of Goods Sold							
2,850,241	2,720,349	(129,892)	-4.8%	2,972,939	122,698	4.1%	
Cost of Goods Sold	2,850,241	2,720,349	(129,892)	-4.8%	2,972,939	122,698	4.1%
Profit Margin	11,349,268	10,329,461	1,019,807	9.9%	10,576,122	773,146	7.3%
Profit Margin %	79.9%	79.2%	0.8%	1.0%	78.1%	1.9%	2.4%

Planning

- Excel-based template design
- Web-based entry
- Parameter-driven
- Security-based

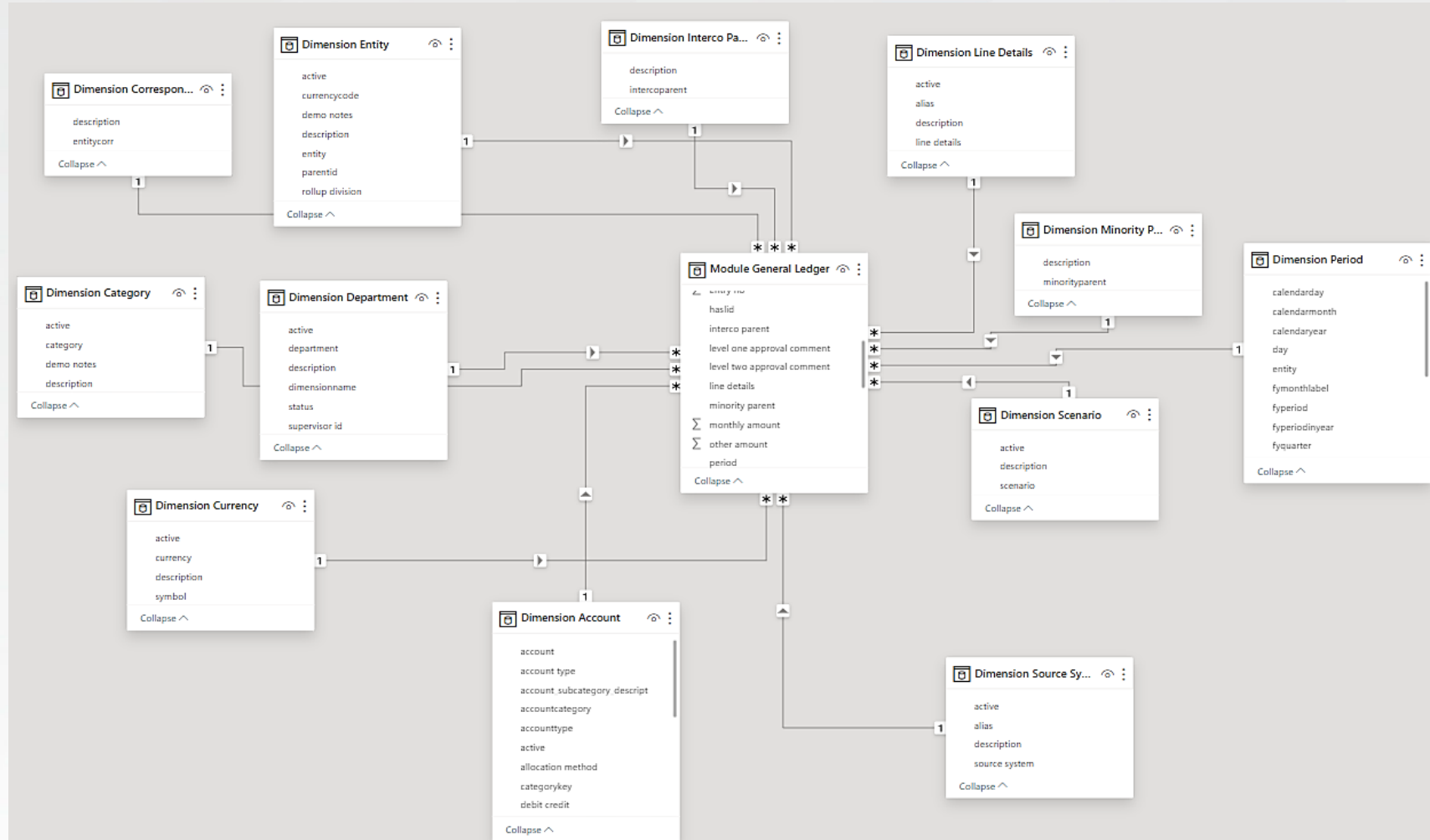
Cash Flow Projection - Twelve Months
Corporate US

	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	
Cash Inflows											
% Change Overall Monthly Change											
\$ Change Proceeds from Loans											
% Change Cash Sales & Collections											
Cash Outflows											
% Change Overall Monthly Change											
% Change Payroll & Related Expense											
Monthly Amt Office Supplies											
Monthly Amt Consulting											
% Change Postage											
	<i>Actual</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	
	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21
Cash at Beginning of Period	\$ 700,980	\$ 230,864	\$ (239,252)	\$ (709,368)	\$ (1,179,483)	\$ (1,649,599)	\$ (2,119,715)	\$ (2,589,831)	\$ (3,059,947)	\$ (3,530,063)	\$ (4,000,179)
Cash Inflows:											
Cash Sales & Collections	(68,603)	(68,603)	(68,603)	(68,603)	(68,603)	(68,603)	(68,603)	(68,603)	(68,603)	(68,603)	(68,603)
Proceeds from Loans	16,611	16,611	16,611	16,611	16,611	16,611	16,611	16,611	16,611	16,611	16,611
Total Cash Inflows	(51,992)	(51,992)	(51,992)	(51,992)	(51,992)	(51,992)	(51,992)	(51,992)	(51,992)	(51,992)	(51,992)
Available Cash Balance	648,988	178,872	(291,244)	(761,360)	(1,231,476)	(1,701,591)	(2,171,707)	(2,641,823)	(3,111,939)	(3,582,055)	(4,052,171)
Cash Outflows (Expenses):											
Payroll & Related Expense	413,425	413,425	413,425	413,425	413,425	413,425	413,425	413,425	413,425	413,425	413,425
Marketing	480,469	480,469	480,469	480,469	480,469	480,469	480,469	480,469	480,469	480,469	480,469
Conference and seminars	4,218	4,218	4,218	4,218	4,218	4,218	4,218	4,218	4,218	4,218	4,218
Advertising	1,354	1,354	1,354	1,354	1,354	1,354	1,354	1,354	1,354	1,354	1,354
Gift and donations	140	140	140	140	140	140	140	140	140	140	140
Travel	52,423	52,423	52,423	52,423	52,423	52,423	52,423	52,423	52,423	52,423	52,423
Special events	480	480	480	480	480	480	480	480	480	480	480
Consulting	9,643	9,643	9,643	9,643	9,643	9,643	9,643	9,643	9,643	9,643	9,643
Audit and Accounting	1,790	1,790	1,790	1,790	1,790	1,790	1,790	1,790	1,790	1,790	1,790

Dashboards

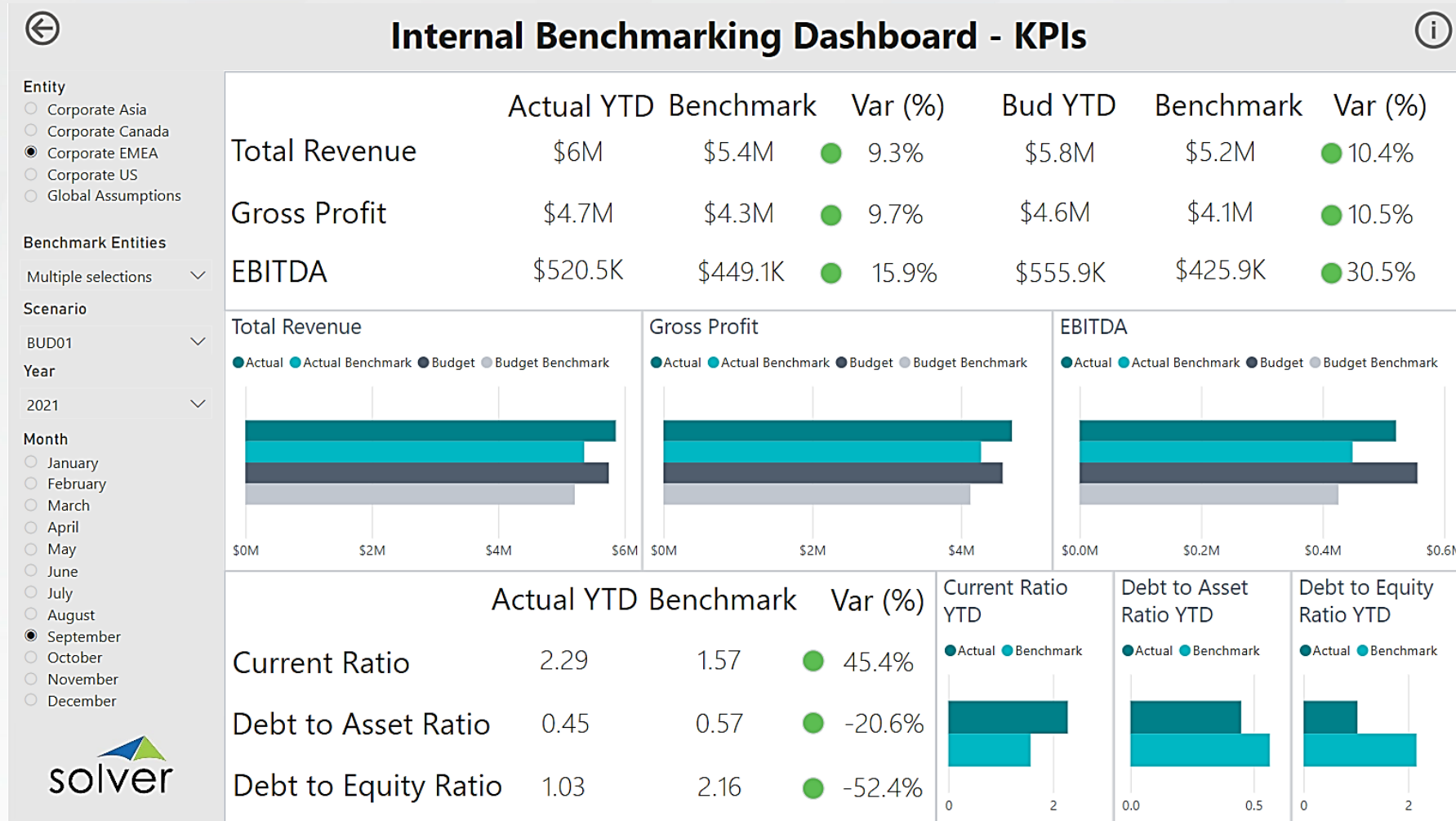
- Based on Data Warehouse
- Power BI or Tableau
- Connects to Modules & Dimensions

Dashboards



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Dashboards



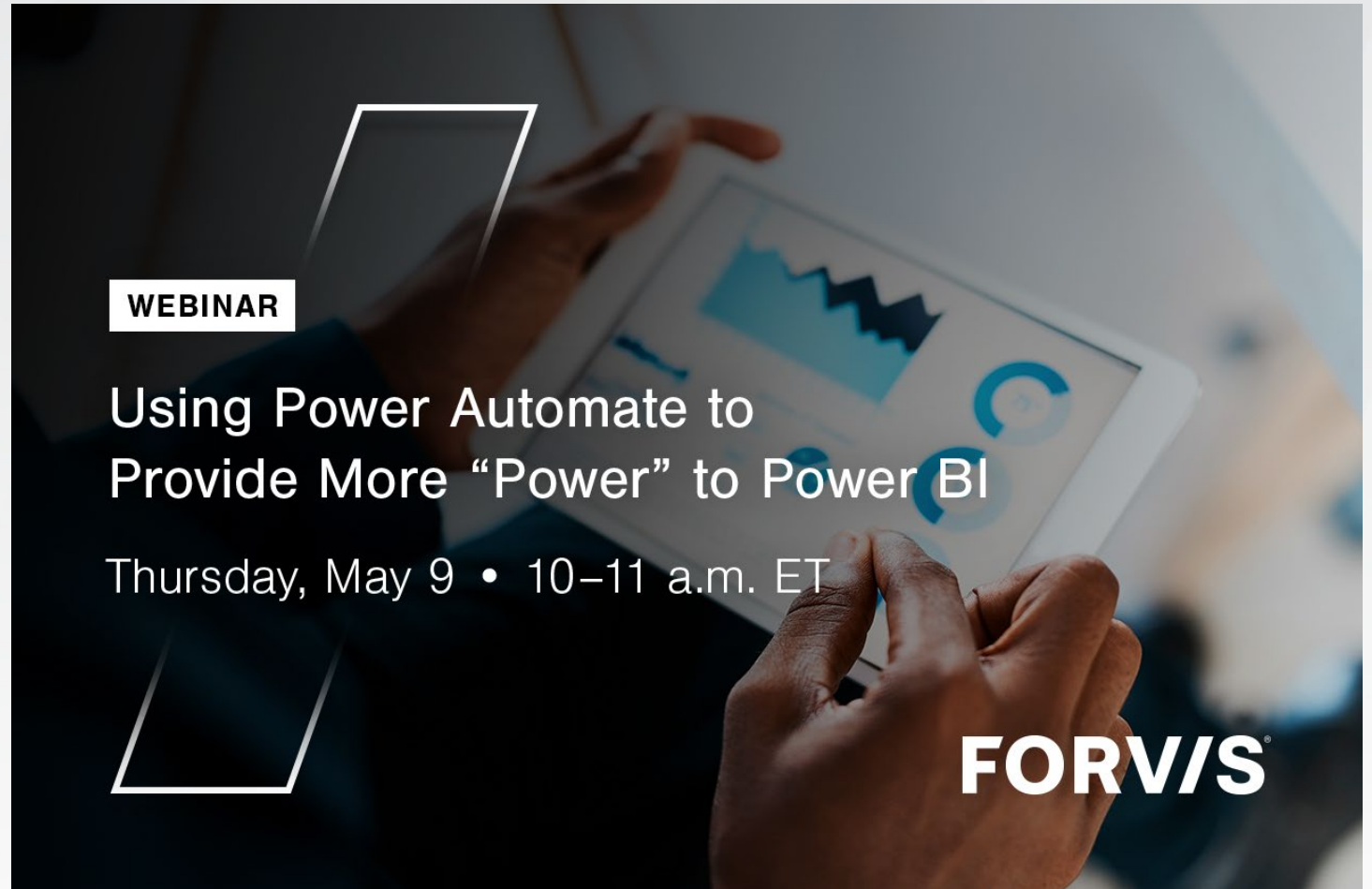
What's Next

Using Power Automate to
Provide More “Power” to
Power BI

Thursday, May 9



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A promotional graphic for a webinar. It features a background image of a person's hands holding a tablet displaying various data charts and graphs. The text is overlaid on this image. The word 'FORV/S' is prominently displayed in the bottom right corner of the graphic.

WEBINAR

Using Power Automate to
Provide More “Power” to Power BI

Thursday, May 9 • 10–11 a.m. ET

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Questions?

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Thank you!

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Assurance / Tax / Consulting