REPLACE HUNDREDS OF FRAGMENTED SSRS REPORTS WITH INTEGRATED DASHBOARDS IN WEEKS

PRESENTED BY CHAD BUHER

SQL SATURDAY TAMPA – FEB 29, 2019

AGENDA

INTRODUCTIONS

REPORTING VS ANALYTICS

KEY FOCUS AREAS FOR DASHBOARD

DEMO: SSRS PARSING TO GET REPORTS AND TABLE/COLUMNS USED

TRADE OFFS OF DIFFERENT DATA INTEGRATION ARCHITECTURE OPTIONS
- DATA LAKES
- DIMENSIONAL MODELS
- REAL TIME SOLUTIONS
- DATA VIRTUALIZATION
- CLOUD BASED SOLUTIONS.

CONNECT

TECHNOLOGY ASSESSMENT

CASE STUDY

INTRODUCTIONS

Chad Buher is the lead Business Intelligence Architect for 1-Answer Corp, a consulting organization that provides BI guidance, support and a suite of software tools that reduces BI development time by 75%.

In roles such as Data Architect Consultant for Pragmatic Works, BI Developer for Dignity Health, Sr. Information Architect for Adventist Health System, and other BI roles over the last 20 years, Chad has seen a wide range of solutions and always seeks to listen and learn from everyone around him.

Chad lives with his wife just outside of Orlando, FL where his once neat and quiet home has turned into an exhilarating daily adventure parenting three amazing kids adopted from foster care.

HOW WOULD YOU DESCRIBE A ROSE?

Describe the Picture
- White
- Beautiful
- Invokes Feeling

Describe your experience
- White, but some Fading
- Soft Pedals
- Prickly Thorns in Stem
- Fragrant smell
- Invokes Stronger Emotions
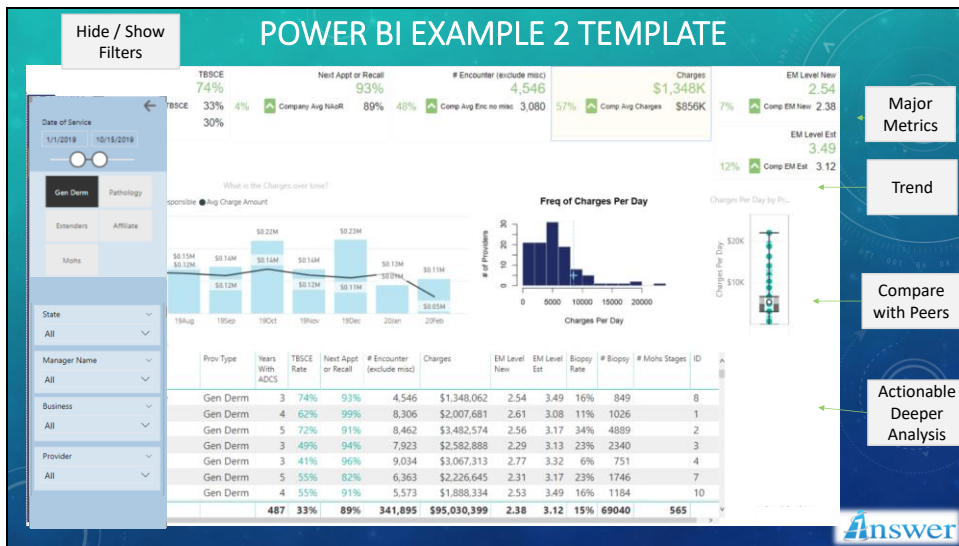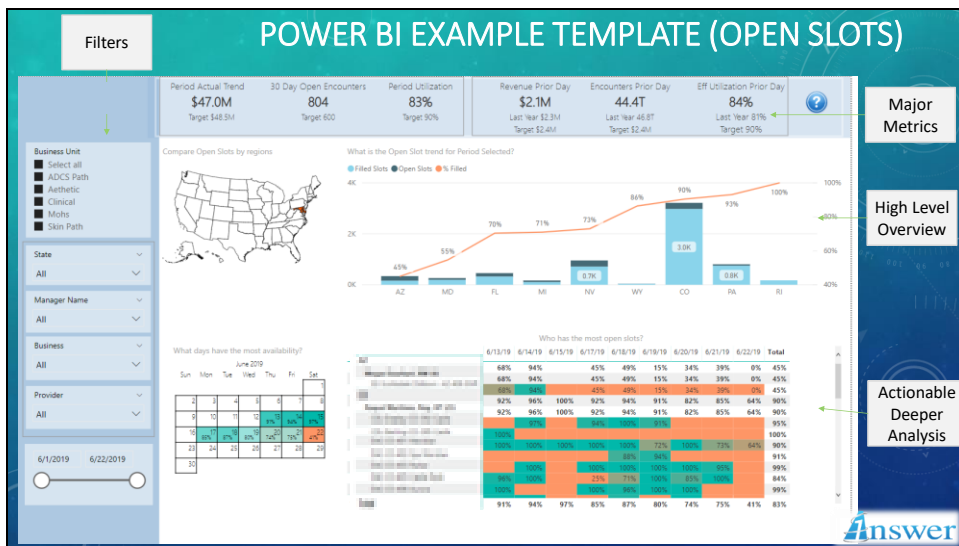
What's the Point?

With a Dashboard people can experience their data in a way that makes it real, with drill through to prove the detail numbers.

They are able to analyze it and discover things they are not even looking for simply by the exploration process dashboards enable.

Be prepared for some pushback, data may make certain people look bad and those people will find ways to disagree with the analysis.

POWER BI EXAMPLE TEMPLATE (OPEN SLOTS)

Filters

- Major Metrics
- High Level Overview
- Actionable Deeper Analysis

POWER BI EXAMPLE 2 TEMPLATE

Hide / Show Filters

- Major Metrics
- Trend
- Compare with Peers
- Actionable Deeper Analysis

Slide 1

HOW DO WE ANALYZE SSRS REPOSITORY

1) Get the Report Xml content

```sql
SELECT
    C.Name AS Report_Name,
    C.Path AS Folder_Path,
    CONVERT(XML,CONVERT(VARBINARY(MAX),C.Content)) AS Report_Xml
FROM ReportServer.dbo.Catalog C
WHERE C.Content is not null
    AND C.Type = 2--Reports only, not folders
```

2) Parse the Report Xml and find report connections and commandText for stored proc

3) Get all the stored procedure details

```sql
SELECT
    OBJECT_ID AS Object_ID,
    OBJECT_SCHEMA_NAME(OBJECT_ID) AS Schema_Name,
    OBJECT_NAME(OBJECT_ID) AS Object_Name,
    definition AS Definition
FROM sys.sql_modules
WHERE OBJECT_NAME(OBJECT_ID) IN ({ objectNames })
```

4) Get the list of tables and columns for each stored procedure

```sql
SELECT *
FROM
sys.dm_sql_referenced_entities
(N'{0}', N'OBJECT')
```

Answer

Slide 2

DEMO OF BASIC ANALYSIS:
SSRS Parsing to Determine Tables and Columns Used

Steps for Basic Analysis

✓ Download code from github 1Answer/**SSRS-Data-Lineage-Inspector**

✓ Pre-process to Identify Data Sources
  - Connect to ReportingServices db
  - Edit DataSource details in data-sources.xml output

✓ Parse SSRS Reports using Data Lineage Inspector

✓ Review Results in Excel

Answer

Slide 3

COMPARE BASIC VS ADVANCED ANALYSIS

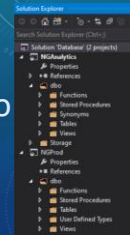| Use Cases Supported	Basic Analysis	Advanced Analysis
Stored Procedures	✓	✓
Views	✓	✓
SQL Embedded in SSRS		✓
Joins from two different database • On Same Server Instance • Linked Server		✓
Needed To Perform Analysis • Basic Analysis needs project from GitHub • Advanced Analysis needs BIA Community Edition	Project on GitHub	BIA Accelerator

Answer

DISCUSSION OF ADVANCED ANALYSIS:
Multi-step SQL Parsing to Determine Tables and Columns Used

Steps for Advanced Analysis

- ✓ Run steps for Basic Analysis
- ✓ Import Database Objects using Visual Studio
  - Zip file
- ✓ Import both result files into BI Accelerator
- ✓ Review Results in Excel

BIAccelerator

Answer

COMPARE DIFFERENT ARCHITECTURES	Integration – What data sources supported	Data Latency – How close to real time is needed	Transformations - Data Cleansing - Deduplication - Business Rules - Metrics, KPIs	Data Security & Privacy	Data Storage – Cost & Effort
Direct - No DW (SRC → Reports, Analytics, Data Science)	Analytics tool connectors	Refresh rate from Report/Analytic Tool. Can do direct, but slow and causes production load	Report/Analytic Tools Responsible	Report/Analytic Tools Responsible	Fastest to start but more time consuming to clean in tools. Disconnected presents problem of not having single source of truth
Data Lake (SRC → DL → Reports, Analytics, Data Science)	DL tech must have connectors	EL dependent	Report/Analytic Tools Responsible	Report/Analytic Tools Responsible	Many DL options Varying degrees of difficulty
Dimensional Model (SRC → DL → DIM → Reports, Analytics, Data Science)	DL tech must have connectors	ETL dependent	DM Responsible Analytic tools for Metric calculations Single Source of Truth	Can be handled in DIM or Report/Analytic Tools	More planning needed, but less reporting issues
Data Virtualization (SRC → DL → DIM → DV → Reports, Analytics, Data Science)	DV Server connectors or DL connectors	More Real Time	DM or DV De-duplication done in DIM Single Source of Truth	Best Privacy Can be handled at DV, DIM or Analytics	High cost of DV, but most flexible

Answer

HOW CAN WE SERVE YOU?

Connect
- in www.linkedin.com/in/chadbuher/
- f www.facebook.com/1AnswerCorp/
- ✉ chad@1-answer.com

Assess
Data Integration, Reporting & Dashboard Technology Assessment
Free 8 hours of expert guidance
Use our tools for SSRS consolidation to Power BI Dashboards

Case Study
Case Study Project
Let us work with you to complete a Project we can use as a Case Study at reduced rates.

BI Accelerator Community edition
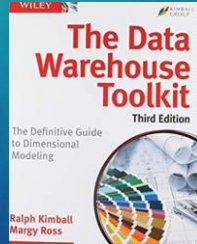No cost, unlocked with points you earn publicizing on social media.

Answer

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REFERENCES

Star Schema

The Complete Reference

The Data Warehouse Toolkit: The Definitive Guide to Dimensional Modeling, 3rd Edition

https://tdwi.org/events/conferences/orlando/sessions/session-list.aspx

- TDWI provides High Quality Training that is Vendor Agnostic